Panasonic
Broadcast Systems

PAL General Catalogue 1989–1990

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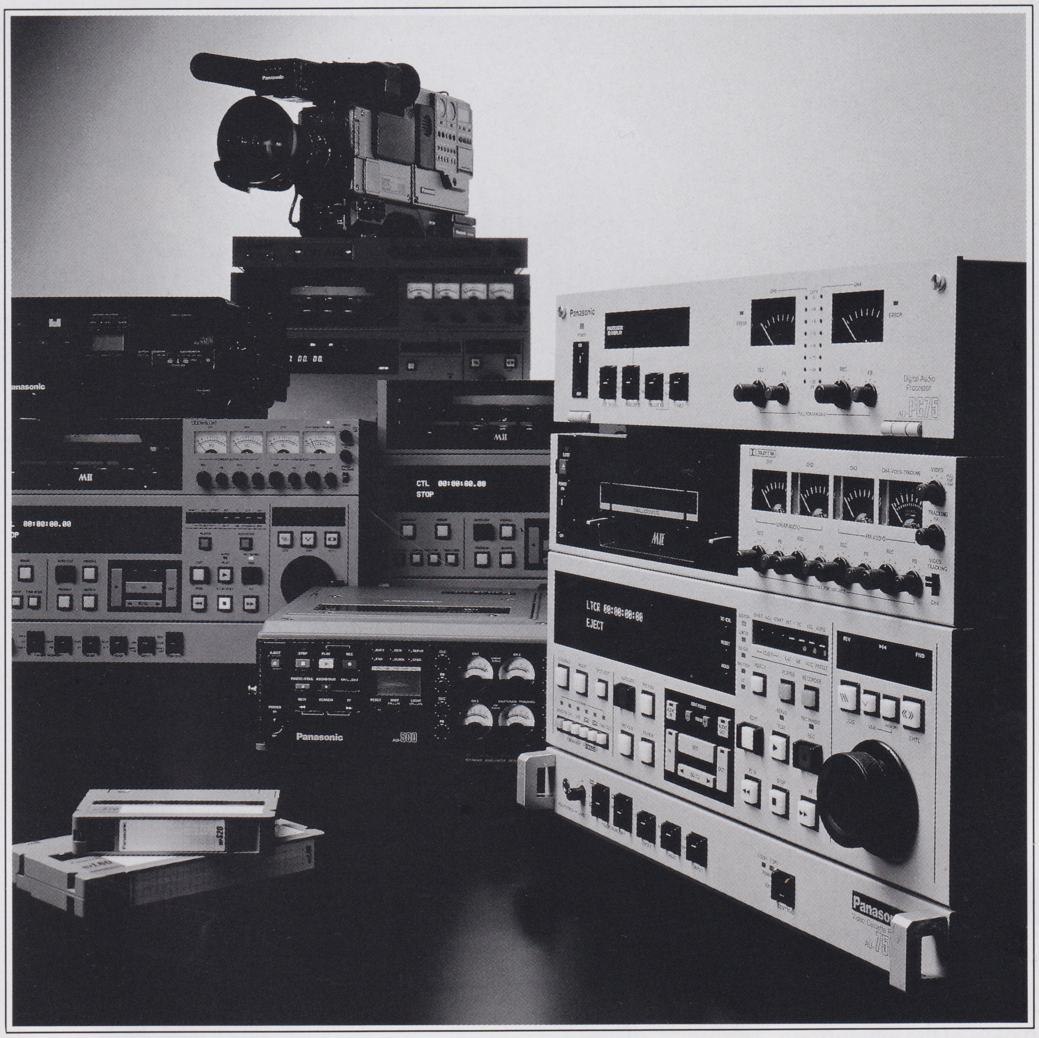


MII

3-CCD Colour Video Camera

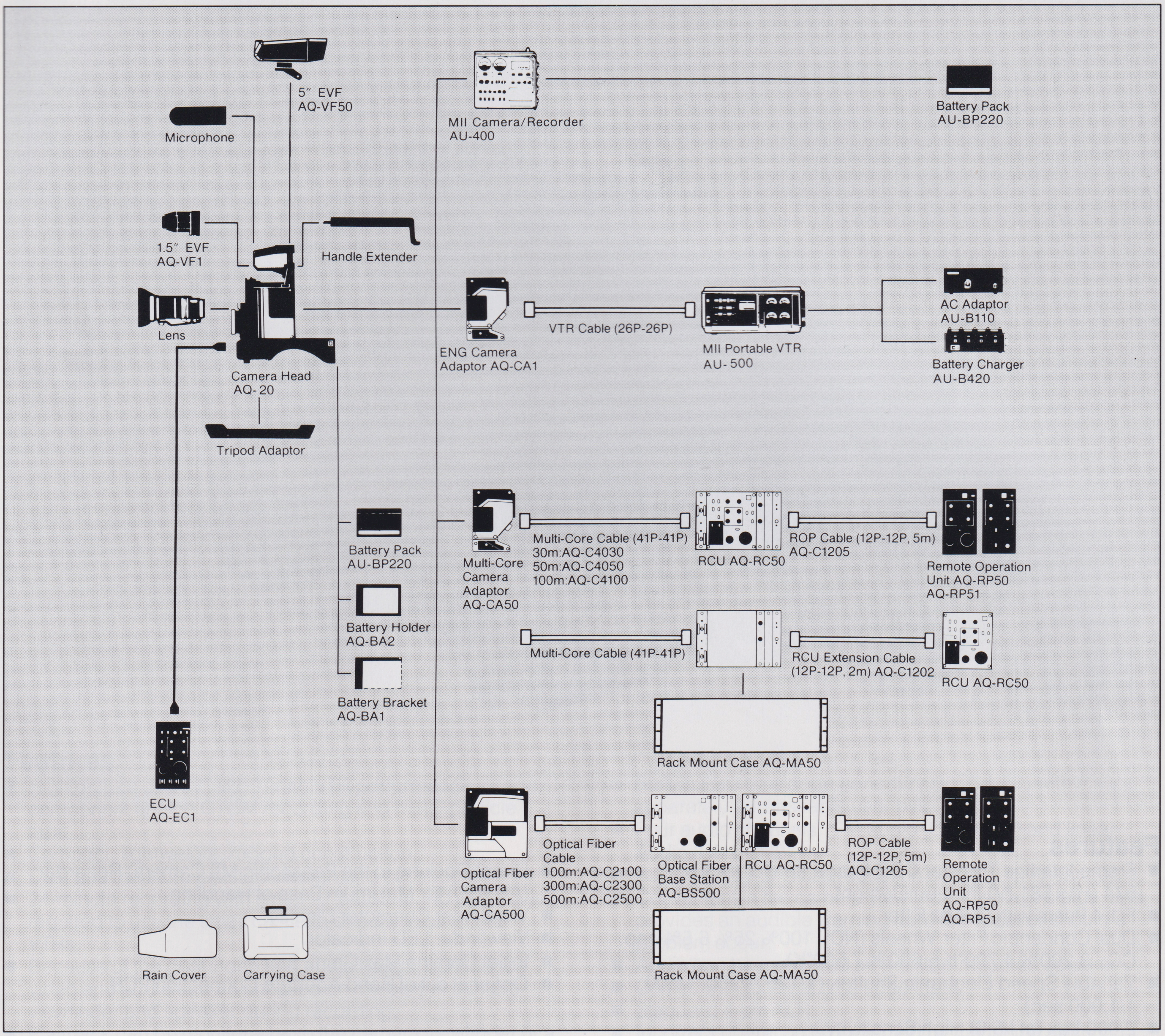
AQ-20 3-CCD Digital Processing Camera (480,000 Pixels)

PRELIMINARY

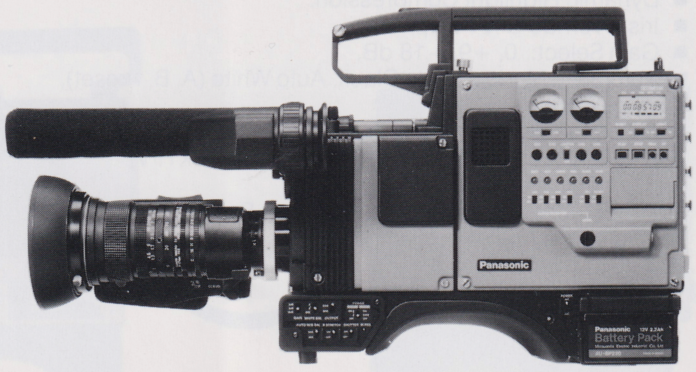
Features

- Three 2⁄3″ Frame Interline Transfer CCD Image Sensor for minimal vertical smear.
- 480,000 pixels, 750 TV lines resolution, F5.6 at 2000 lux High sensitivity, 60 dB high S/N ratio.
- Registration in 0.05% of the whole zone.
- Variable Speed Electronic Shutter (1/100, 1/125, 1/250, 1/500, 1/1000, 1/2000).
- Centralized controls.
- Parameter settings adjustable for digital processing.
- Optional digital adaptor (planned) for digital interfacing with other digital equipment.
- Cross Colour Suppression (2D LFP).
- High Chroma Aperture Correction.
- Precise, one-touch Shading Correction (36 H × 120 V).
- Digital Gamma Adjustment (0.35 to 0.55).
- Selectable Enhancement Frequency Control (2H Enhancer).
- Auto High Light Compression Control.
- Auto White/Black Balance (A/B/Preset).
- Black Stretch Switch.
- EBU Standard Colour Bar.
- Gain Select (0, +9 dB, +18 dB).
- Direct Docking to MII Camera Recorder (AU-400).
- Built-in Genlock Function.
- 1.5″ Electronic Viewfinder (5″ EVF possible).
- Lightweight at 2.95 Kg, with a durable magnesium alloy chassis.

System Configuration



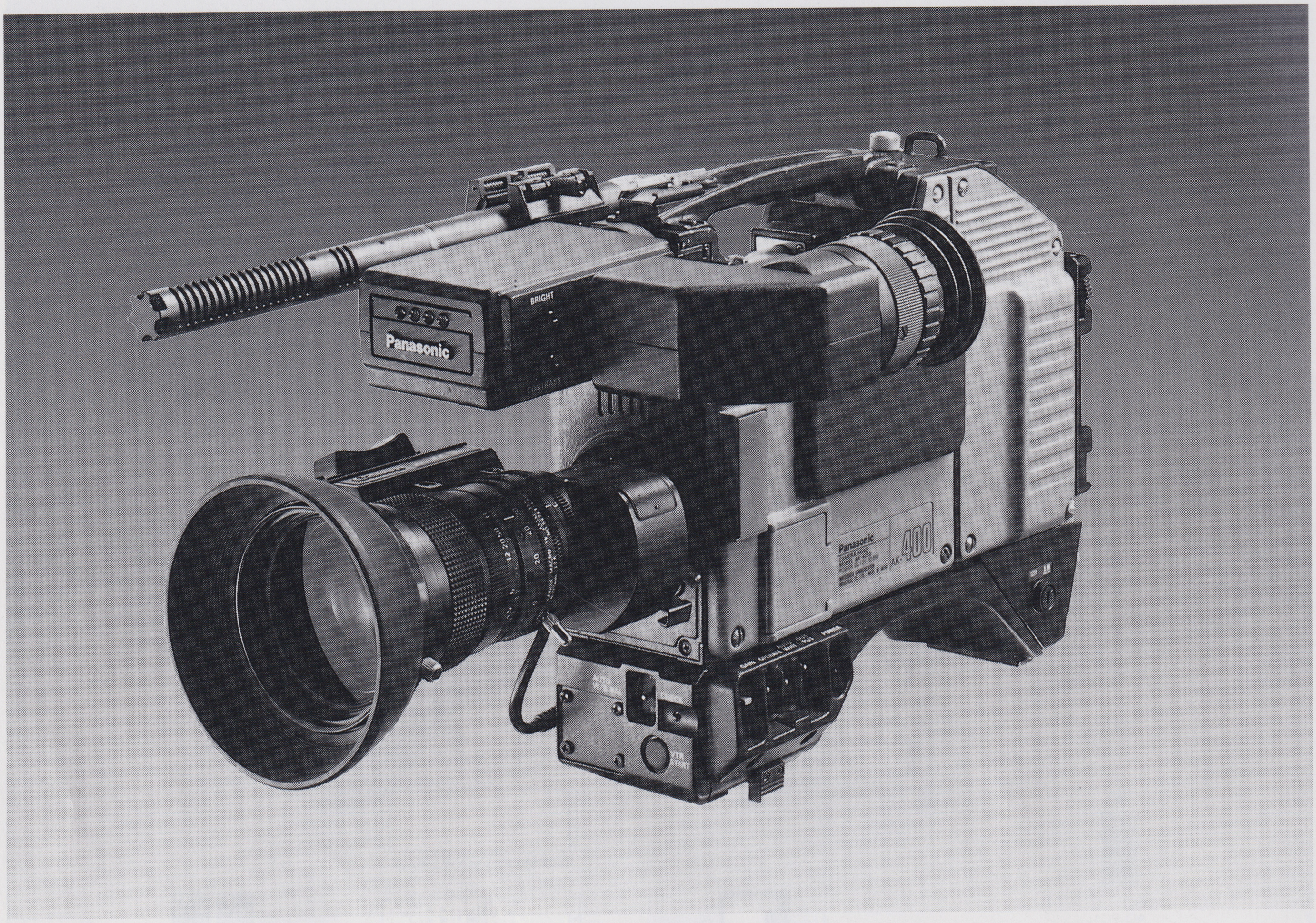
Camera/Recorder System



AQ-20 with AU-400

3-CCD Colour Video Camera

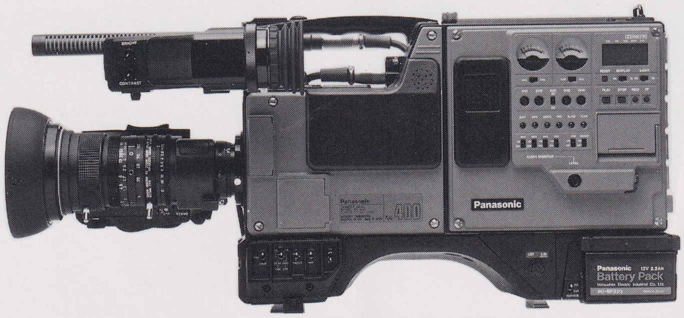
AK-400 3-CCD Colour Video Camera



Features

- Frame Interline Transfer CCD Image Sensor (RGB) 574 (H) × 581 (V) Pick-up Element.
- F/1.4 Prism with Quartz Filter.
- Dual Concentric Filter Wheels (ND: 100% 25% 6.5% cap, CC: 3,200°K 4,700°K 5,600°K 7,500°K).
- Variable Speed Electronic Shutter. (1/125, 1/250, 1/500, 1/1,000 sec)
- 2,000 Lux (at f/5.6) High Sensitivity.
- High Signal-to-Noise Ratio of 57 dB.
- 650 TV Lines Resolution.
- 0.05% All Zones Registration.
- Dynamic Highlight Compression.
- Iris Override ± ½ f-stop.
- Gain Select: 0, +9, +18 dB.
- Automatic Modes: Auto Black, Auto White (A, B, Preset), Pulse Cancel.
- 3 Channel RGB Linear Colour Matrix.
- R,G,B, Shading Correction: White H/V, Black H/V, Extender.
- Lens Extender Red/Blue Gain, Master Pedestal.
- 2H Vertical Aperture Correction.
- Zebra Level Indicator.
- Direct Docking to the Panasonic MII Camera/Recorder (AU-400) for Maximum Ease of Handling.
- Viewfinder Character Display.
- Viewfinder LED Indicator.
- Initial Gamma Max Gain: 5.
- Optional out of Band Aperture Connection PCB.

Camera/Recorder System

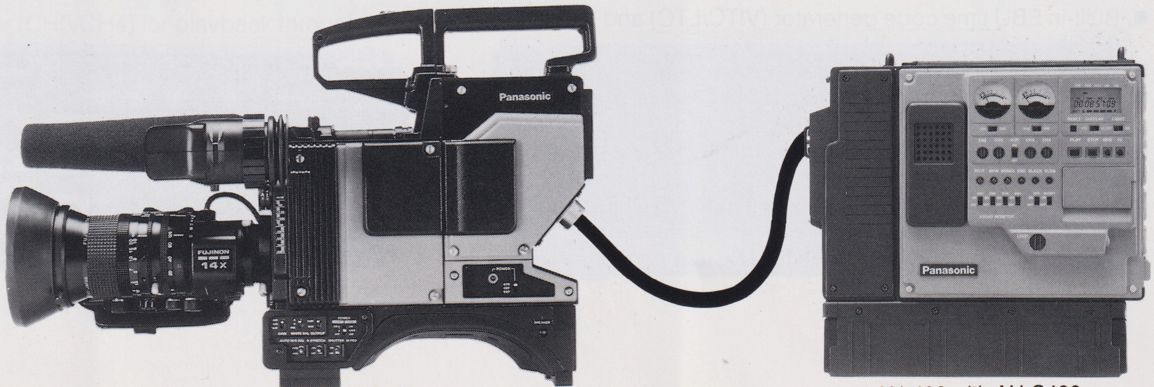


AK-400 with AU-400 (MII Recorder)

AU-400 Portable Video Cassette Recorder

Features

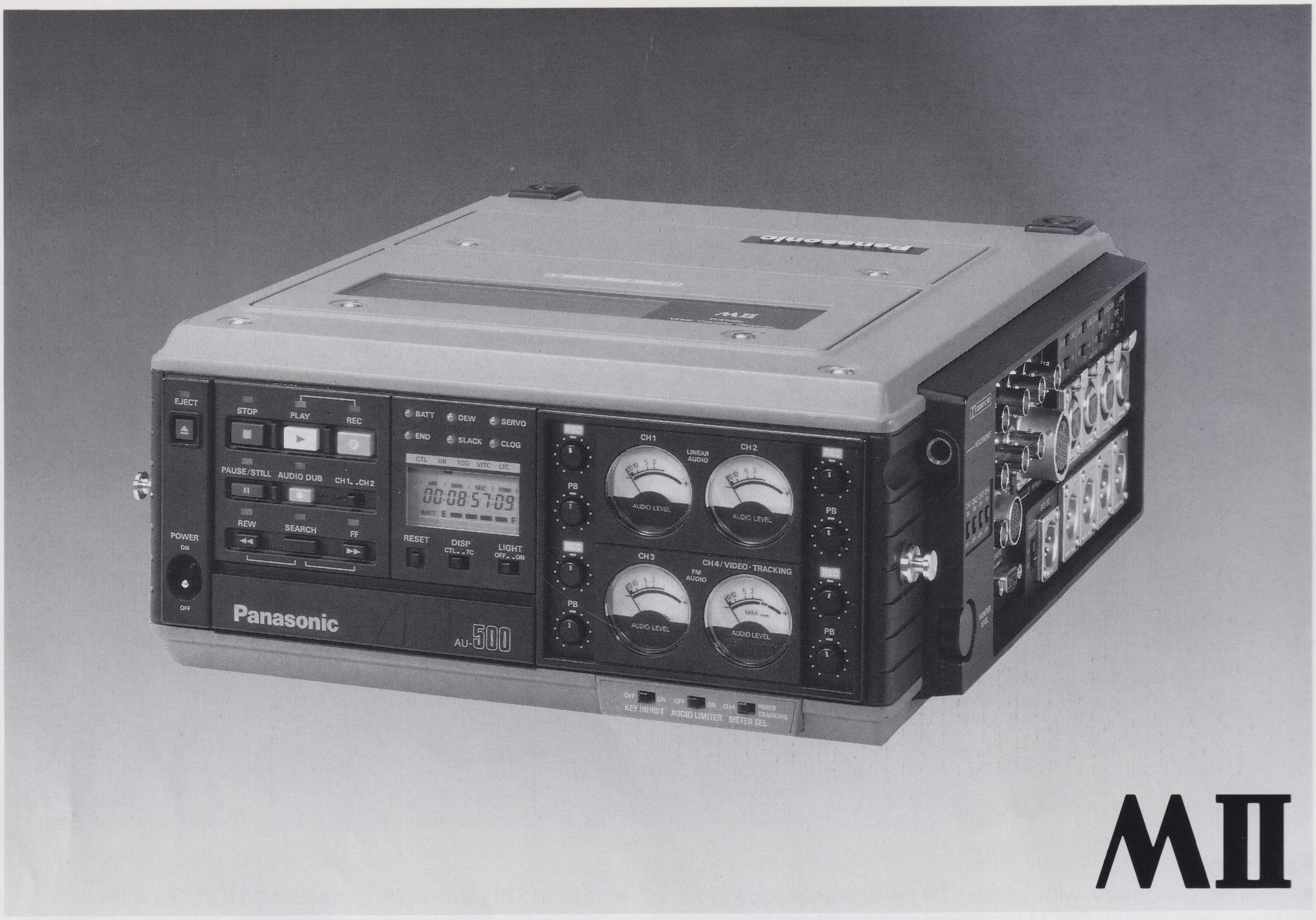
- High picture quality, with 1-inch VTR performance, due to component analog CTCM recording and metal particle tape.
- Compact, lightweight, rugged construction.
- Dust and moisture resistant design and construction.
- 24-minute recording with small ½″ cassette. No adaptor is required to use the small cassette directly in other MⅡ VTRs.
- Because of the dual video and audio heads, confidence video and audio can be checked on the built-in camera viewfinder and speaker during recording.
- Playback can be monitored with the camera viewfinder or a B/W monitor via the video output connector.
- Auto backspace editing is accurate within 3±2 frames.
- Built-in EBU time code generator (VITC/LTC) with separately addressable user bits.
- Four audio channels: FM audio (CH3/CH4) and linear Audio (CH1/CH2).
- Built-in Dolby C* noise reduction circuitry for linear audio.
- Convenient in the camera viewfinder displays status, and provides an audible warning from the speaker should a problem occur.
- Audio can be monitored on the side-mounted speaker.
- Comes with external time code input.
- Standard 4-pin XLR.
- Incorrect operation is prevented by the Inhibit switch.



AQ-20 AU-400 with AU-S400

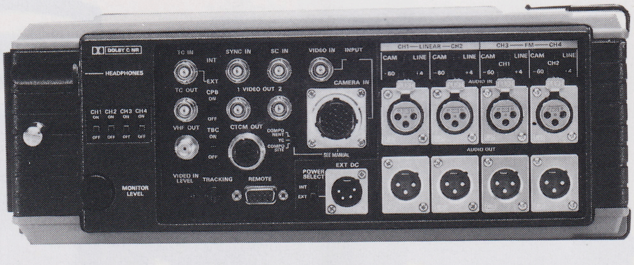
Portable VTR

AU-500 Portable VTR



Features

- High picture quality provides 1-inch VTR performance due to component analog CTCM recording and metal particle tape.
- Sturdy, one-piece aluminum die-cast chassis construction for the tape transport.
- Dust and moisture resistant design and construction.
- 97-minute recording/playback using standard ½″ cassettes. A small cassette provides 24-minute recording/playback without requiring an adaptor.
- Confidence playback of colour video and audio is possible. Video can be monitored in the camera viewfinder and at the video output; audio can be monitored at the audio monitor output.
- Built-in EBU time code generator (VITC/LTC) and reader (LTC).
- Time code data can be superimposed on the video output.
- Four audio channels: FM audio (CH3/CH4) and linear audio (CH1/CH2).
- Built-in Dolby C* noise reduction circuitry for linear audio.
- Built-in RS-422 9-pin serial interface.
- Field colour playback, including a simplified DOC circuit, allows field viewing.
- S.C. IN and SYNC IN terminals for TBC connection.
- Five times normal speed search, reverse and forward, with picture and time code, for quick tape access and review.
- Audio dubbing on longitudinal tracks CH1/CH2.
- Warning indicators (DEW, SERVO, TAPE END, CLOG, BATTERY, SLACK) inform the operator of VTR status.
- Built-in RF modulator (CH3/CH4) for TV set monitoring.
- Camera input (26-pin) can be switched among component, YC, composite.
- One AU-BP402 or two AU-BP220 Battery Packs can be used.
- Incorrect operation is prevented by the inhibit switch.



Panasonic
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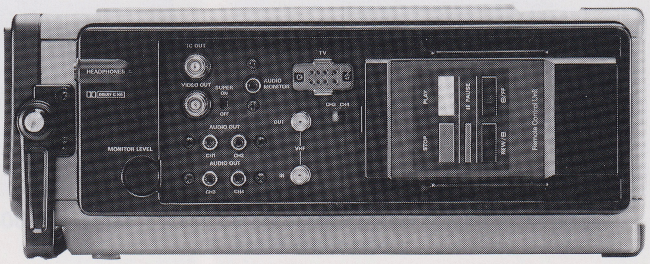
AU-505 Field Player

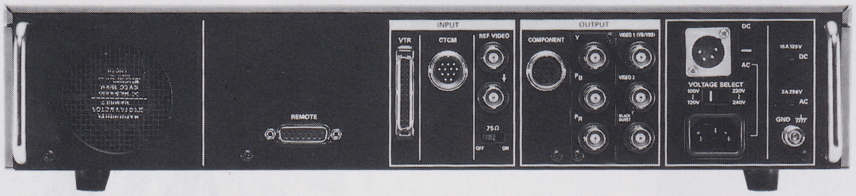
Features

- High quality picture based on MII component analog format.
- Compact, lightweight, and easy-to-carry player.
- 97-minute playback on standard ½″ cassette, or 24-minute playback using the small cassette, without the need for an adaptor.
- Four audio channels: FM audio (CH3/CH4) and linear audio (CH1/CH2).
- Dolby C* noise reduction selectable for linear audio (CH1/CH2).
- 8-digit LCD tape counter.
- Built-in time code reader (LTC/UB).
- Character generator.
- Built-in RF modulator (CH3/CH4) for playback through a conventional TV set (OPTION).
- 8-pin EIA-J connector for easy connection to a video monitor.
- Wireless remote control included with on-board storage space.
- 2-way power supply (battery: one AU-BP402 or two AU-BP220. AC requires AU-B50 adaptor.)



Time Base Corrector

AU-TB50B Time Base Corrector



This unit provides 32-line time base correction, and the processing of playback signals to conform to broadcast standards.

Features

- Special component time base corrector is an optional companion for the AU-500.
- Correction window of 32H for three component baseband signals.
- Broadcastable reproduction, with no guard band noise, is possible from normal speed in reverse to twice normal speed forward.
- S/N deterioration due to bandwidth and noise from digital conversion is minimized by 8-bit, 13.5 MHz sampling.
- Colour Framing editing.
- Playback is synchronized with the reference signal up to ±5 time normal speed; up to ±16 times in monochrome.
- Digital 1H line component (Y, R-Y, B-Y) dropout compensation circuit is built-in.
- Vertical blanking may be any line between 10H and 21H.
- Internal sync generator.
- Remote level and phase control is possible with the optional Encoder Remote Control (AU-ER65) accessory.

MII System Options

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AU-S400
VTR Adaptor

This VTR adaptor increases the range of applications of the AU-400, making it a stand-alone MII portable recorder. It can be connected to a component or composite type ENG camera system.

AU-BP220
Rechargeable Battery Pack

Rechargeable battery pack for the AU-400, AU-S400, and AU-500.

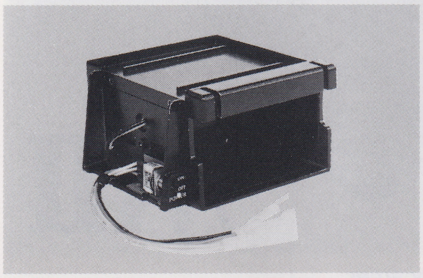
- Specifications:
  Type of Battery: Nicd rechargeable
  Voltage: 12 V DC
  Current Capacity: 2.2 AH
  Weight: 680 g

AU-BP402
Rechargeable Battery Pack

Rechargeable battery pack for the AU-500.

- Specifications:
  Type of Battery: Nicd rechargeable
  Voltage: 12 V DC
  Current Capacity: 4 AH
  Weight: 1.6 kg

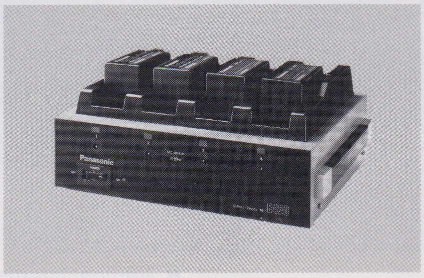
AU-M400
Camera Recorder Battery Holder



Camera-base mounted battery holder for the AU-BP220.

- Specifications:
  Dimensions:
  102 (W) × 60 (H) × 120 (D) mm
  Weight: 190 g

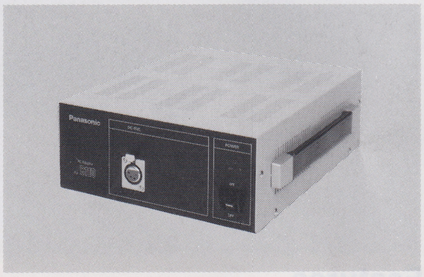
AU-B420
Battery Charger



Battery Charger for the AU-BP220 and AU-BP402 Battery Packs.

- Specifications:
  Power Supply: 100–240 V AC (selectable), 50/60 Hz
  Power Consumption: Approx. 60 W
  Charging Time: 1 hour per AU-BP220; 2 hours per AU-BP402
  Weight: 2.85 kg

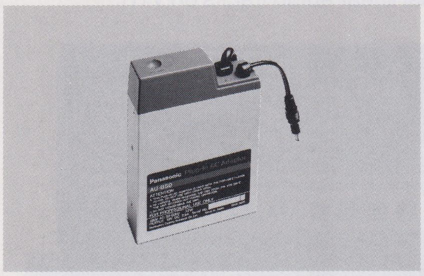
AU-B110
AC Adaptor



Supplies DC power for AU-400, AU-S400, AU-500, and AU-505.

- Specifications:
  Power Supply: 100/120/220/240 V AC (selectable), 50/60 Hz
  Power Consumption: 160 W
  Output: DC out (XLR, 4-pin), 12 V at 10 A
  Weight: 3 kg

AU-B50
AC Adaptor



Supplies DC power for AU-505.

- Specifications:
  Power Supply: AC 120 V, 50/60 Hz
  Power Consumption: 37 W
  Dimensions:
  210 (W) × 85 (H) × 357 (D) mm
  Weight: 0.8 kg

AU-H400
Soft Case

Soft case for the AU-400/AU-S400 combination.

AU-H500
Soft Case

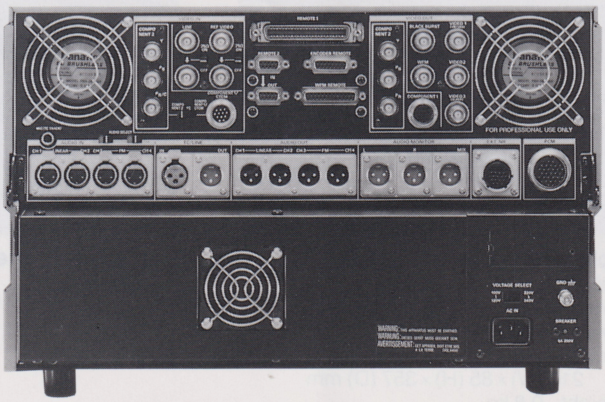
Soft case for the AU-500 Portable Field Recorder.

PCM Studio VTR

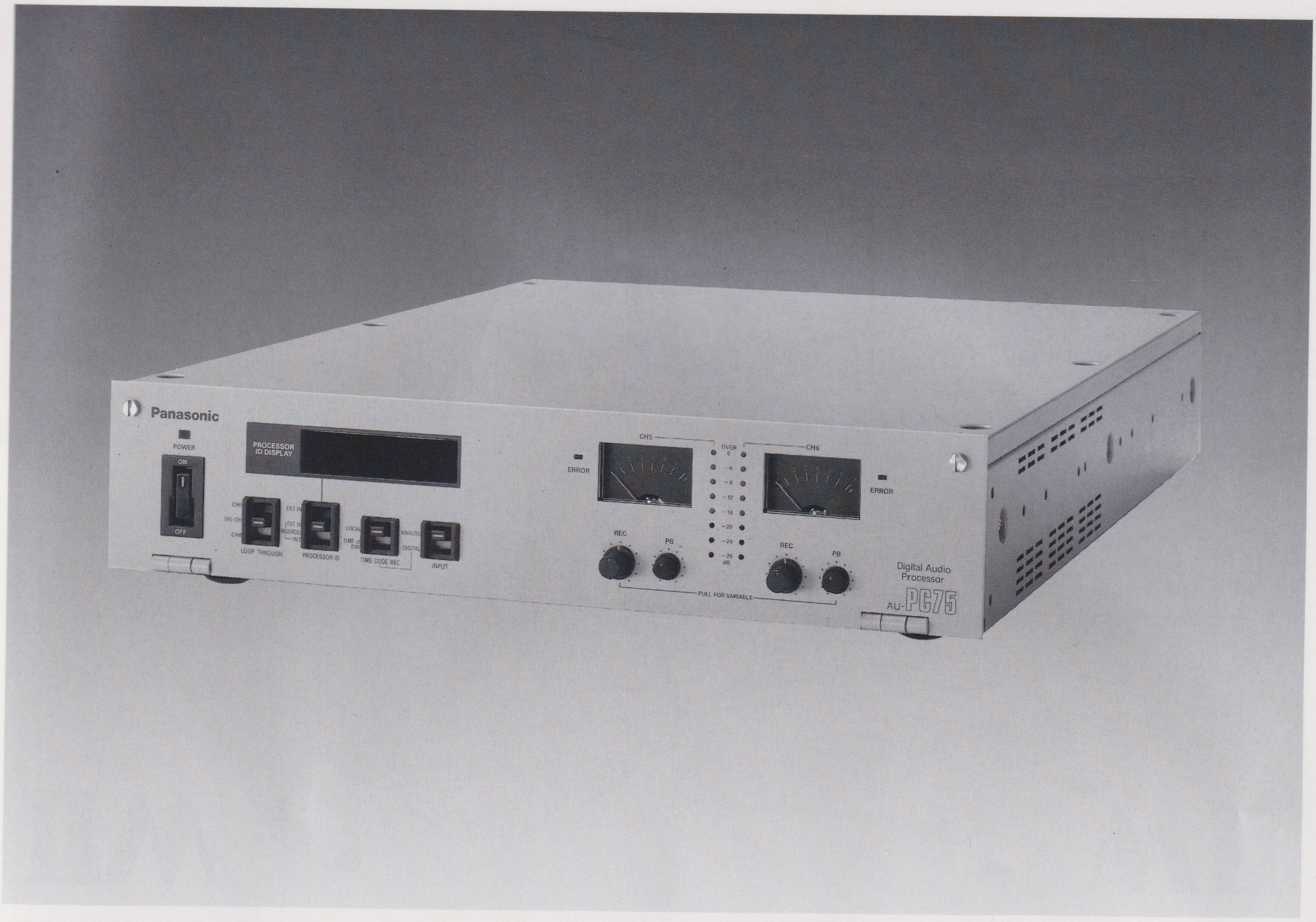
AU-750 PCM Studio VTR

Features

- High picture quality, due to component analog CTCM (Chrominance Time-Compressed Multiplexing), provides 1-inch VTR performance.
- 97-minute recording and playback with standard-sized ½" cassette. A small, 24-minute cassette may also be used, without an adaptor.
- Digital audio (PCM) recording/playback capability, using AU-PC75 digital audio processor.
- A total of five audio channels (2-PCM audio, 2-FM audio 1-linear audio channels).
- Upward compatibility with MII VTRs already in use.
- Two "Pre-read" heads permit independent PCM editing.
- Auto-Tracking provides broadcastable pictures in still and slow motion, from normal speed reverse to twice normal speed forward, in 56 steps.
- Confidence playback of video and audio (CH1/CH2) is possible during recording.
- Built-in digital component TBC with 32-line correction.
- Built-in EBU time code generator/reader (VITC/LTC).
- Large, 32-character, two line alphanumeric display.
- Maximum of 32× normal speed forward and reverse search and jog are possible as well as jog.
- Presettable smooth-action slow motion.
- TSO (tape speed override) allows adjustment of playback speed within by 15% in 1% steps.
- Time code data can be superimposed on one video output.
- Built-in RS-422 9-pin serial interface and 50-pin parallel interface.
- Vertical Interval Subcarrier.
- Colour Framing.
- Audio Split Editing.
- Cue Signal Recording.
- Variable Speed Memory.
- Programme Play allows fine control of play speed from −80% to 120% in 0.1% steps.
- The AU-750/PC75 combination allows PCM sound monitoring in variable speed (−1 to +2×) and JOG mode.
- VARISPEED PCM SOUND allows easy location of edit points for the PCM audio tracks, similar to the technique used for conventional linear audio tracks on VTR.

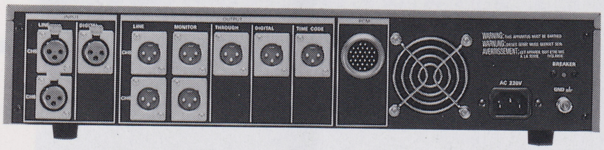


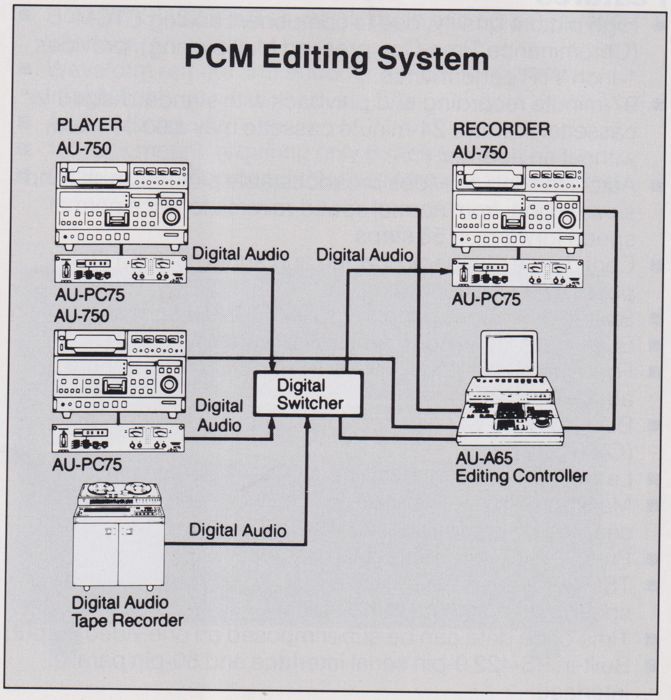
AU-PC75 PCM Processor



Features

- High-quality, 2-channel digital audio (PCM) sound with 16-bit linear quantization and 48-kHz sampling frequency.
- Both analog input/output and digital input/output (AES/EBU Standards):
- Loop Through Out.
- 19″ rack mountable.

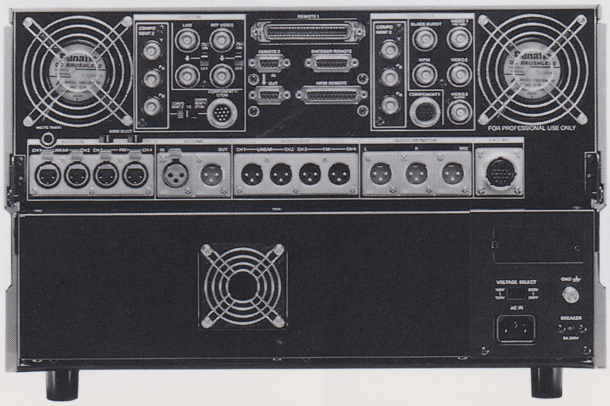




AU-650B Studio VTR

Features

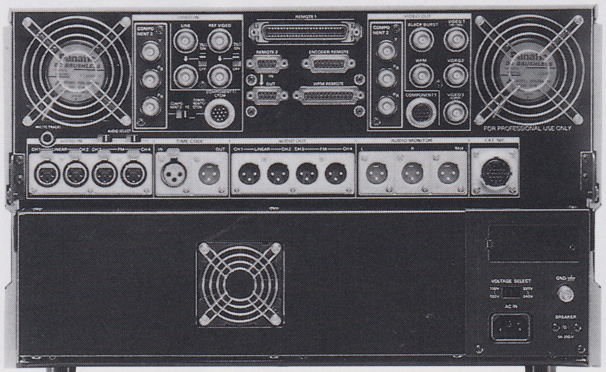
- High picture quality, due to component analog CTCM (Chrominance Time-Compressed Multiplexing), provides 1-inch VTR performance.
- 97-minute recording and playback with standard-sized ½″ cassette. A small, 24-minute cassette may also be used, without an adaptor.
- Auto-Tracking provides broadcastable pictures in still and slow motion, from normal speed reverse to twice normal speed forward, in 56 steps.
- Confidence playback of video and audio (CH1/CH2) is possible during recording.
- Built-in digital component TBC with 32-line correction.
- Built-in EBU time code generator/reader (VITC/LTC).
- Four audio channels: FM audio (CH3/CH4) and linear audio (CH1/CH2).
- Built-in Dolby-C* noise reduction circuitry for linear audio (CH1/CH2).
- Large, 32-character, two line alphanumeric display.
- Maximum of 32× normal speed forward and reverse search and jog are possible as well as jog.
- Presettable smooth-action slow motion.
- TSO (tape speed override) allows adjustment of playback speed within by 15% in 1% steps.
- Time code data can be superimposed on one video output.
- Built-in RS-422 9-pin serial interface and 50-pin parallel interface.
- Tiltable operation panel may be removed and remoted.
- Vertical Interval Subcarrier.
- Colour Framing.
- Audio Split Editing.
- Cue Signal Recording.
- Variable Speed Memory.
- Programme Play allows fine control of play speed from −80% to 120% in 0.1% steps.
- Auto video Equalisation.
- Waveform remote and encoder remote for system integration.
- S.C. H-phase adjustment for proper signal PAL output.
- 19″ rack mount, requiring only 6 rack units.



AU-640 Studio VTR

Features

- High picture quality, due to component analog CTCM (Chrominance Time-Compressed Multiplexing), provides 1-inch VTR performance.
- 97-minute recording and playback with standard-sized ½″ cassette. A small, 24-minute cassette may also be used, without an adaptor.
- Built-in digital component TBC with 32-line correction.
- Built-in EBU time code generator/reader (VITC/LTC).
- Four audio channels: FM audio (CH3/CH4) and linear audio (CH1/CH2).
- Built-in Dolby-C* noise reduction circuitry for linear audio (CH1/CH2).
- Audio Split Editing.
- Colour Framing.
- Variable Memory Setting.
- Large, 32-character, two line alphanumeric display.
- Maximum of 32× normal speed forward and reverse search and jog are possible as well as jog.
- Presettable smooth-action slow motion.
- TSO (tape speed override) allows adjustment of playback speed within by 15% in 1% steps.
- Time code data can be superimposed on one video output.
- Built-in RS-422 9-pin serial interface and 50-pin parallel interface.
- Waveform remote and encoder remote for system integration.
- Audio Mixing.
- 19″ rack mount, requiring only 6 rack units.
- Tiltable operation panel may be removed and remoted.

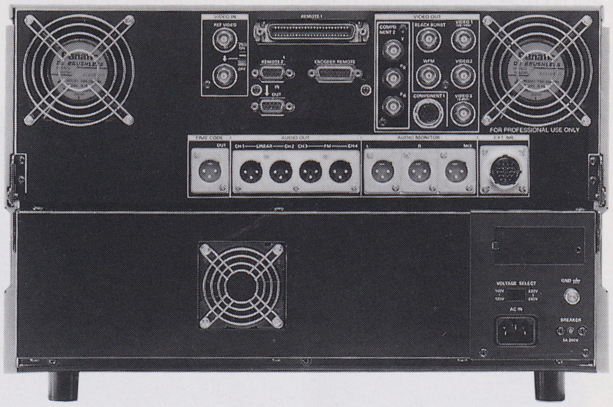


Studio Player

AU-630 Studio Player

Features

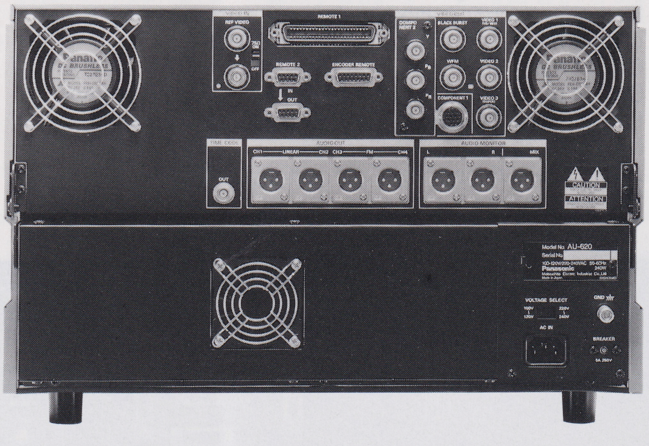
- High picture quality provides 1″ VTR performance due to component analog CTCM recording and metal particle tape.
- 97-minute playback time with a standard ½″ cassette.
- Auto Tracking provides broadcastable picture in still and slow motion from −1× to +2× normal speed.
- Built-in TBC with a 32 Hp-p correction capability.
- Remote control of an externally connected TBC is possible.
- Colour framing.
- Four audio channels: FM audio (CH3/CH4) and linear audio (CH1/CH2).
- Built-in Dolby-C* noise reduction circuitry for linear audio.
- Built-in EBU time code reader (VITC/LTC).
- 8-digit display.
- Maximum 32× shuttle search in forward and reverse with monochrome picture. Viewable colour video can be monitored up to 4× normal speed, forward and reverse, with frame by frame jog control.
- Variable Memory Playback.
- Built-in RS-422 9-pin serial interface and 50-pin parallel interface.
- Multi cue botton.
- Waveform remote and encoder remote for system integration.
- Program play function.
- Mixed audio monitor.
- 19″ rack mountable.



AU-620 Studio Player

Features

- High picture quality provides 1″ VTR performance due to component analog CTCM recording and metal particle tape.
- 97-minute playback time with a standard ½″ cassette.
- Built-in TBC with a 32 Hp-p correction capability.
- Remote control of an externally connected TBC is possible.
- Colour framing.
- Four audio channels: FM audio (CH3/CH4) and linear audio (CH1/CH2).
- Built-in Dolby-C* noise reduction circuitry for linear audio.
- Built-in EBU time code reader (VITC/LTC).
- 8-digit display shows time code data, drop/non-drop frame mode of VITC/LTC and warning indications.
- Maximum 32× shuttle search in forward and reverse with monochrome picture. Viewable colour video can be monitored up to 4× normal speed, forward and reverse, with frame by frame jog control.
- Time code can be superimposed on the monitor.
- Built-in RS-422 9-pin serial interface and 50-pin parallel interface.
- Component/composite output is possible.
- Mixed audio monitor.
- 19″ rack mountable.

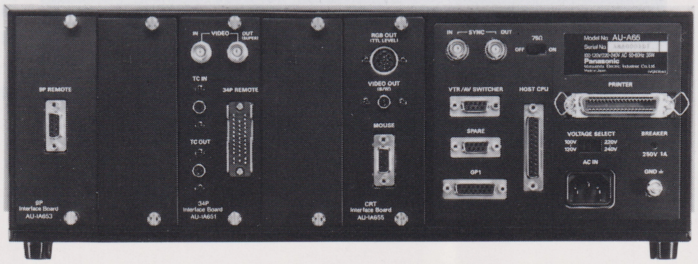


Editing Controller

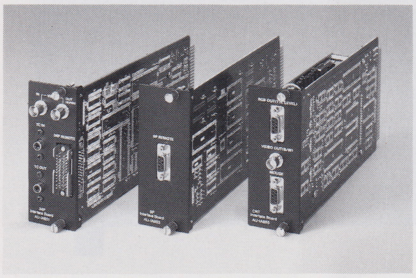
AU-A65 Editing Controller

Features

- Optional AU-SW65 connects up to 4 VTRs via RS-422A.
- Connection to optional CRT Monitor.
- Editing using time code is frame-accurate.
- Maximum 250-event memory.
- Interface adapter provides multi-format (¾″, 1″, S-VHS) VTR compatibility.
- Selectable CTL, LTC, VITC.
- Variable memory editing (VME).
- Audio split editing.
- First edit recording allows reference signal to be recorded onto blank tape prior to assemble editing.
- Colour framing.
- Shuttle from still up to 32 times normal playback in both forward and reverse. Jog and Slow Motion are possible from −1× to +2× normal speed.
- A/B roll transitions enable cut and dissolve (0 to 999 frames).
- Errors are indicated by an audible alarm and error message display.
- V-V-V (preview), V-B-V, and B-V-B review editing are possible.
- Internal back-up battery protects data in EDL memory.
- 15-pin GPI port.
- Interface adapter permits storage/retrieval of editing data onto/from 5″ floppy disks.
- 36-pin parallel port allows printer connection.
- Editing points can be set with the Mark In/Out button.
- Preroll is presettable to 3, 5, 7, or 10 seconds.



Accessories

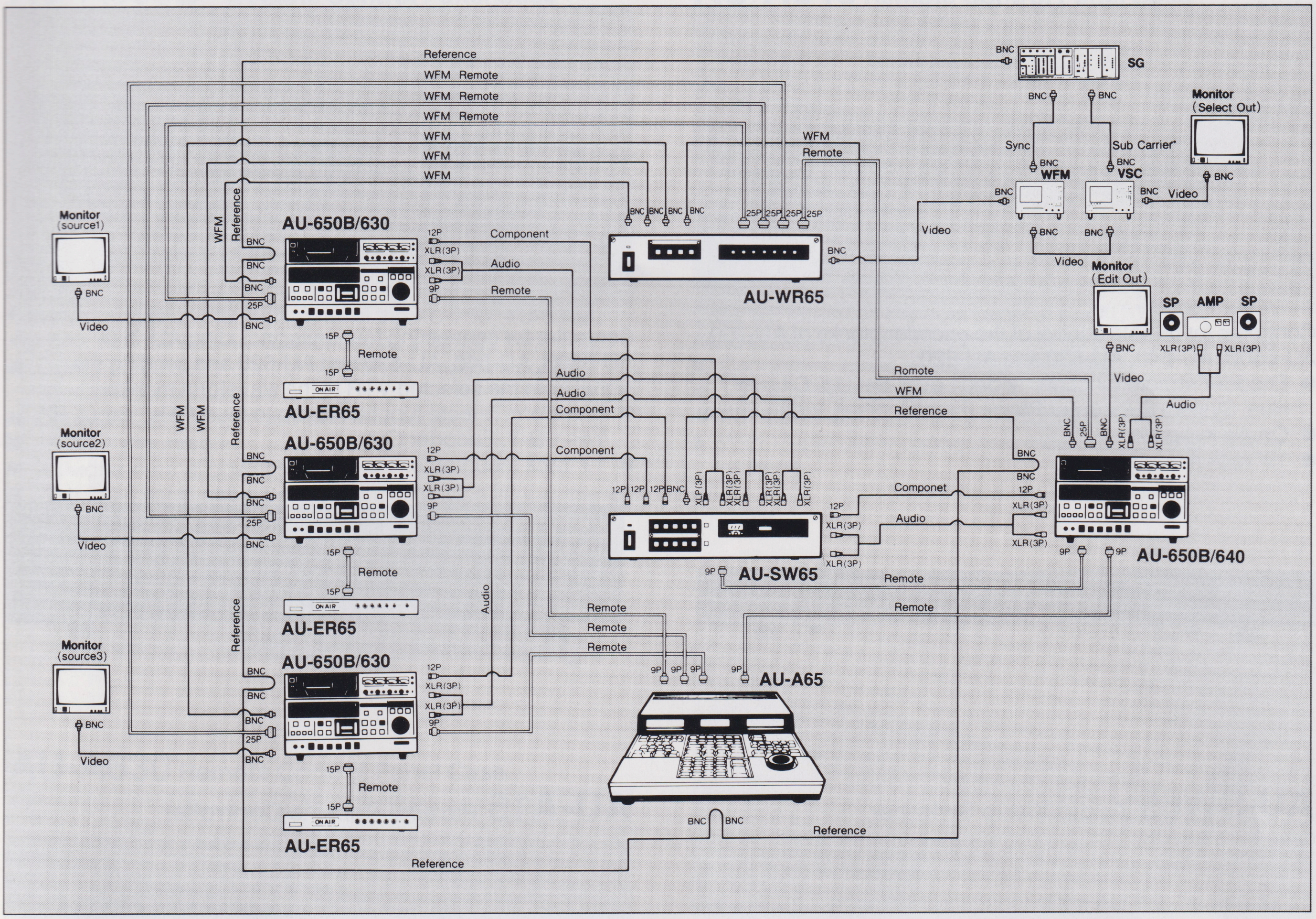


AU-IA651
34-pin interface board

AU-IA653
9-pin interface board

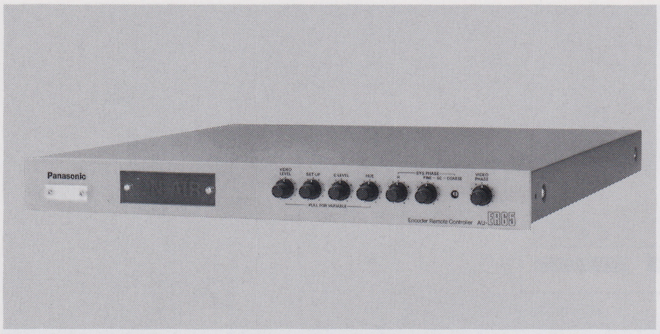
AU-IA655
CRT interface board

MII VTR System Chart (Multi-Component Editing System)



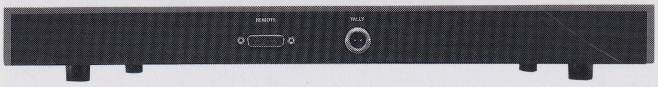
MII System Options

AU-ER65 Encoder Remote Control Unit

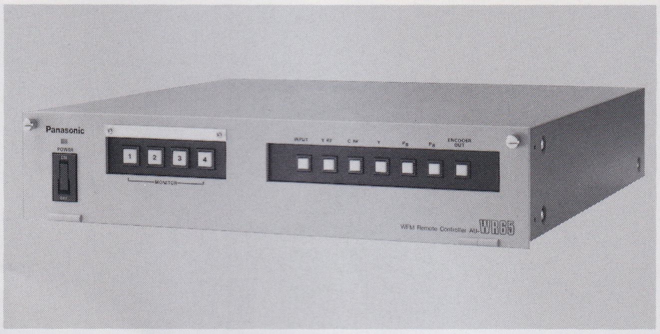


Controller for remote control of the encoder blocks of AU-750, AU-650B, AU-640, AU-630 and AU-620.

- Encoder remote function: Video Level, Set Up, C Level, Hue, System Subcarrier Phase (Fine/Coarse), Video Phase.
- On-Air Indication.
- 19″ rack mountable.

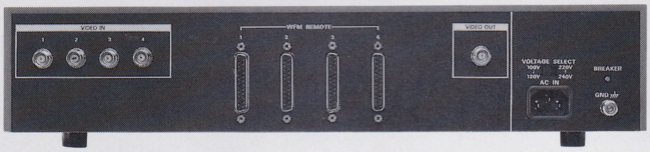


AU-WR65 Waveform Remote Control Unit



Controller for connecting four units, including AU-750, AU-650B, AU-640, AU-630 and AU-620 and sending the signal from the selected VTR to the waveform monitor.

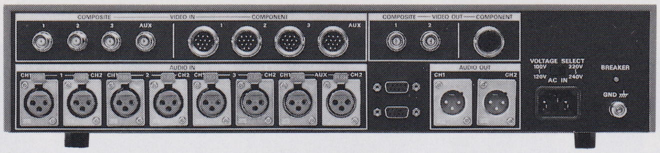
- Waveform remote function for up to four VTRs: Input, RF, Y/R-Y/B-Y, Encoder Out.
- 19″ rack mountable.



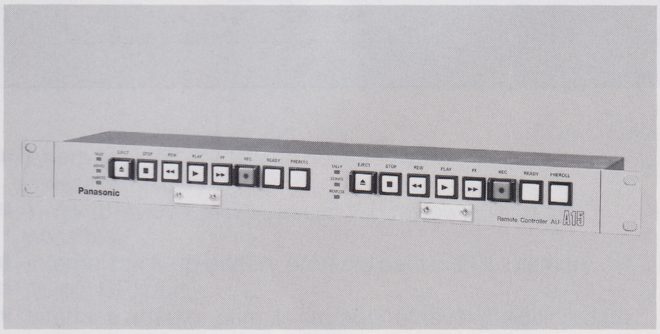
AU-SW65 Audio Video Switcher

For switching and transmitting the 3-system component, composite, and audio L&R input signal.

- 3-input selection for component, composite, audio L&R signal.
- Built-in fade (dissolve) function.
- A/B roll selection function
- Transition set, up to 999 frames.
- Interface with AU-A65
- 19″ rack mountable.



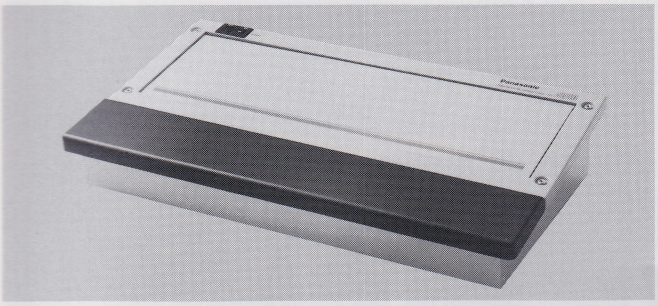
AU-A15 Parallel Remote Controller



Controller for remote control of two MII Studio VTRs at a maximum distance of 100 m away from the VTRs.

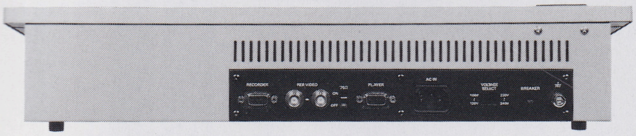
- The following VTR functions: EJECT, STOP, REW, PLAY, FF, REC, READY, PREROLL.
- Equipped with TALLY, SERVO and REMOTE LEDs and all operation buttons have corresponding LED indication lamps.

AU-A650B Remote Control Panel Case

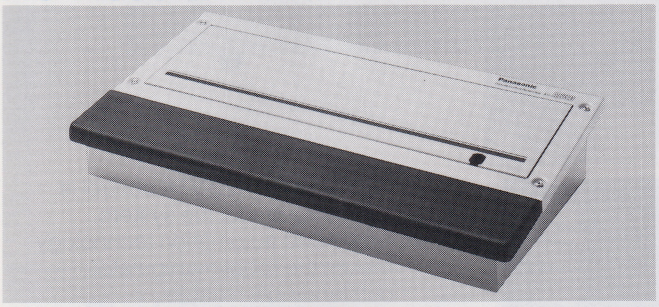


Case will mount on the front panel of the AU-750, AU-650B, AU-640, AU-630 and AU-620 for use as a remote controller.

- Designed for serial control (with 9-pin cable) using the RS-422A connector.
- Equipped with reference video monitor jack.
- 19″ rack mountable.
- Includes internal power supply.
- With 9-pin serial cable connection, extension is possible for up to 1,000 m.



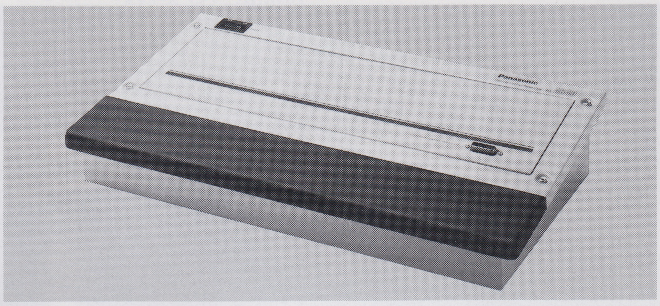
AU-A630 Remote Control Panel Case



Case will mount on the front panel of the AU-750, AU-650B, AU-640, AU-630 and AU-620 for use as a remote controller.

- Connection to the VTR via 20-pin cable.
- 19″ rack mountable.
- 2 m Extension cable is standard.

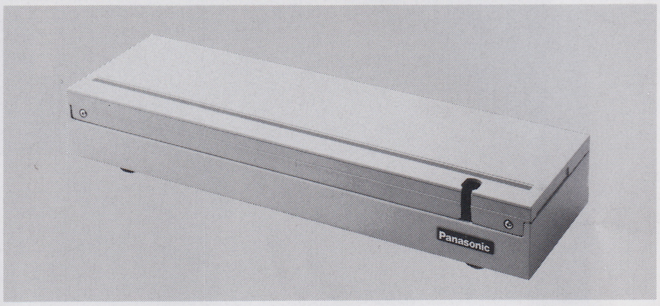
AU-A640 Remote Control Panel Case



Case will mount on the front panel of the AU-750, AU-650B, AU-640, AU-630 and AU-620 for use as a remote controller.

- Connection to the VTR via 15-pin cable.
- 19″ rack mountable.
- Equipped with internal power supply.
- With 15-pin cable connection, extension of up to 10 m is possible.

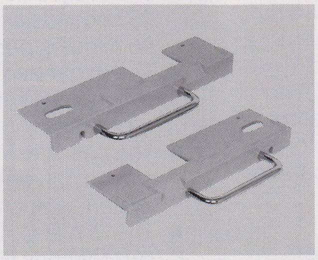
AU-A620 Remote Control Panel Case



Case will mount on the front panel of the AU-750, AU-650B, AU-640, AU-630 and AU-620 for use as a remote controller.

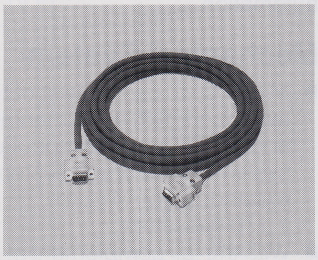
- Connection to the VTR via 20-pin cable.
- 6.4 feet 2 m Extension Cable is standard.

AU-M60
Rack Mount Adaptor



Mount Adaptor for 19-inch rack.

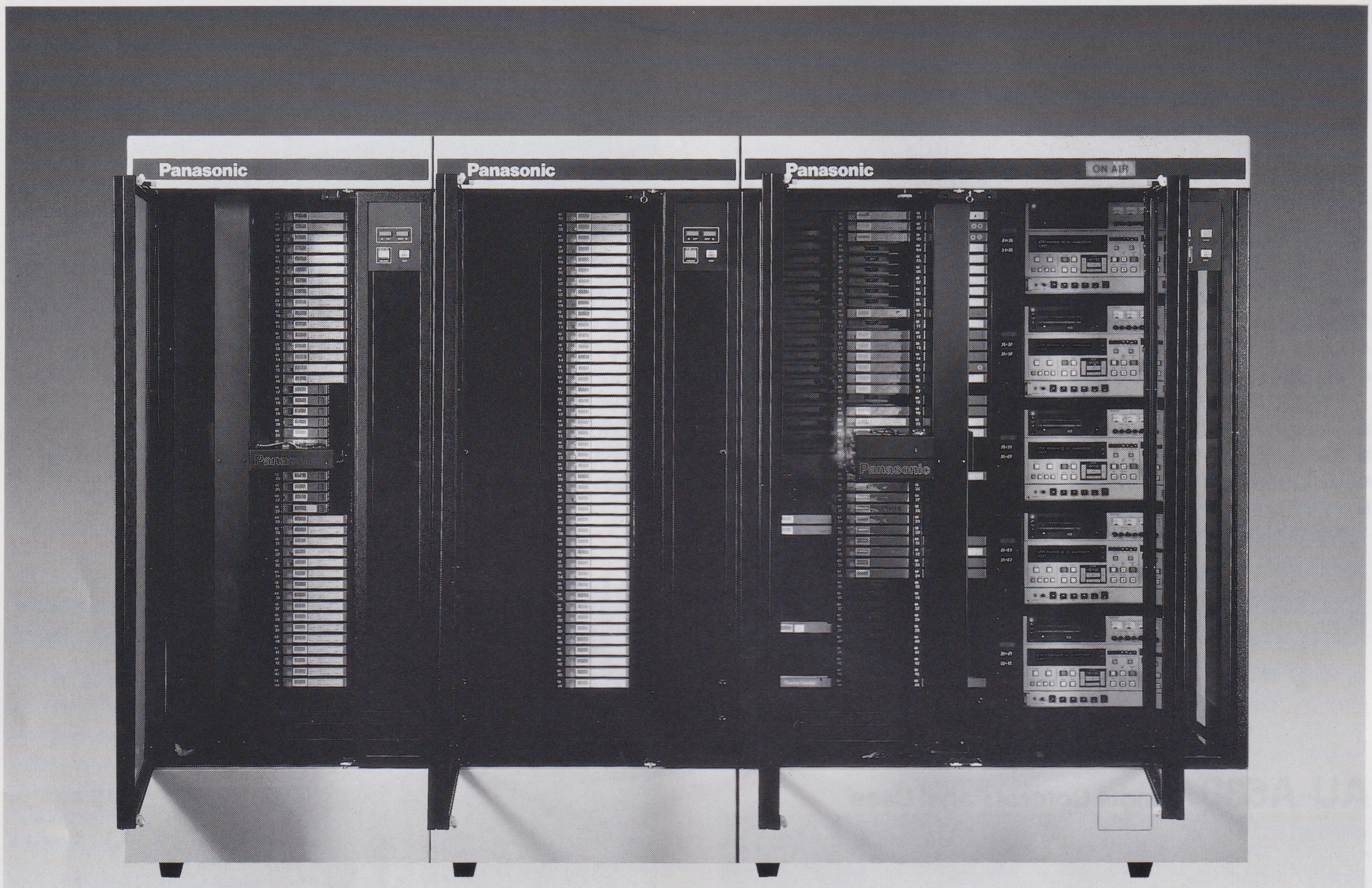
AU-C5/C10/C30
Serial Remote Control Cable



9-pin remote control cable.
AU-C5 (5 m)
AU-C10 (10 m)
AU-C30 (30 m)

Automated Broadcasting System

M.A.R.C.-II

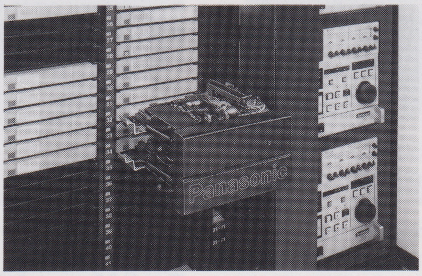


●M.A.R.C.-II/800

The M.A.R.C.-II playback/recording systems automatically select the proper MII cassette from an expandable library for sports, I.D.s, or programs in fact, for any program element.
Randomly intermixed large and small cassettes may be used. The basic system handles 123 cassettes and expands to a total system capacity of almost 1,200 cassettes. This flexibility enables complete broadcast automation.

Mechanical System

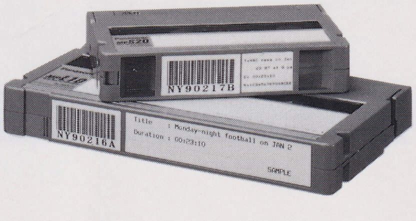
- M.A.R.C.-II, can consist of 5 VTRs, two robots with three manipulators, and an expandable modular storage system. This storage system can be expanded from 472 to 1,176 cassettes.
- With the full complement of five VTRs, minimum event time with continuous playback can be as short as 10 seconds. Even with the full complement of 1,176 cassette.



this event time is only 10 to 15 seconds, while still allowing up to 90 minutes per cassette.
- The expanded systems have redundant protection with dual robots and three manipulators.
- The cassette Input/Output (I/O) station can be used while the system is operating.
- The M.A.R.C.-II sequential output switcher has video and audio outputs for Program (A), Preview (B), Test, and Monitor.
- EBU type RS-422 VTR control is used throughout the system.
- Advanced automation technology makes the robot manipulator outstandingly reliable.
- Self-diagnostic functions inform the operator of system status, errors or malfunctions.
- System VTR maintenance may be performed from the rear while the robot is in operation.

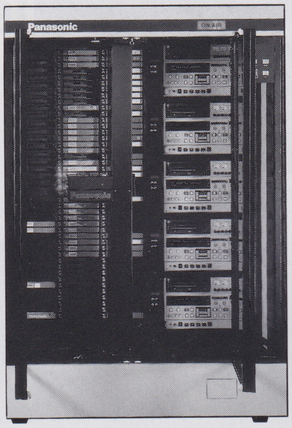
Operational System

- The M.A.R.C.-II systems can accept one-event per cassette or multi-events per cassettes.

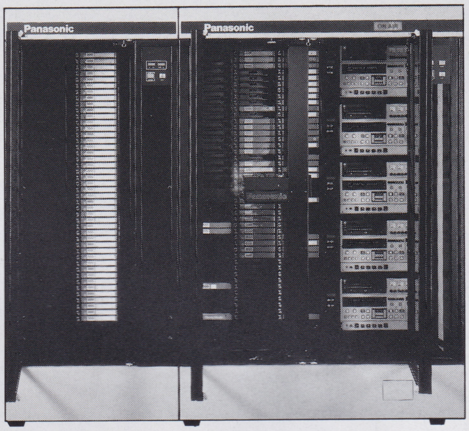


- Bar codes are used to identify the cassettes. The bar code reader, built into the manipulator, checks each cassette as it is loaded.
- 65,000 elements can be held in the database. In addition, the system can be coupled to the database of an external host computer (Option).
- The playlist is updated in real time, and can be edited. A list of required cassettes is printed out in advance.
- Auto protect function lends on-air playback added security by running a synchronized back-up copy of the programs. The back-up VTR records program sequence as a single continuous event, then runs it in sync with the programs as they are broadcast.
- Automatic recording of network feed for time-shifted broadcasting.
- Component/composite inputs allow multi-source editing by connection with external VTRs, and a variety of component editing combinations between the system's 5 VTRs.
- Cassettes are purged in accordance with user selectable criteria.

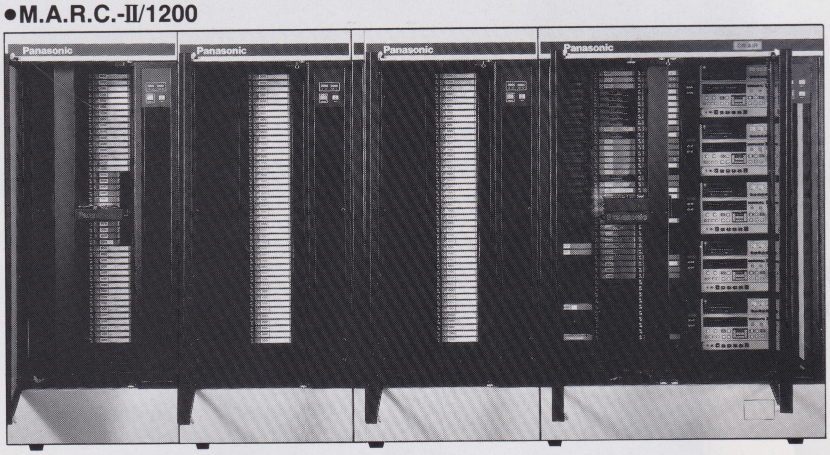
●M.A.R.C.-II/100



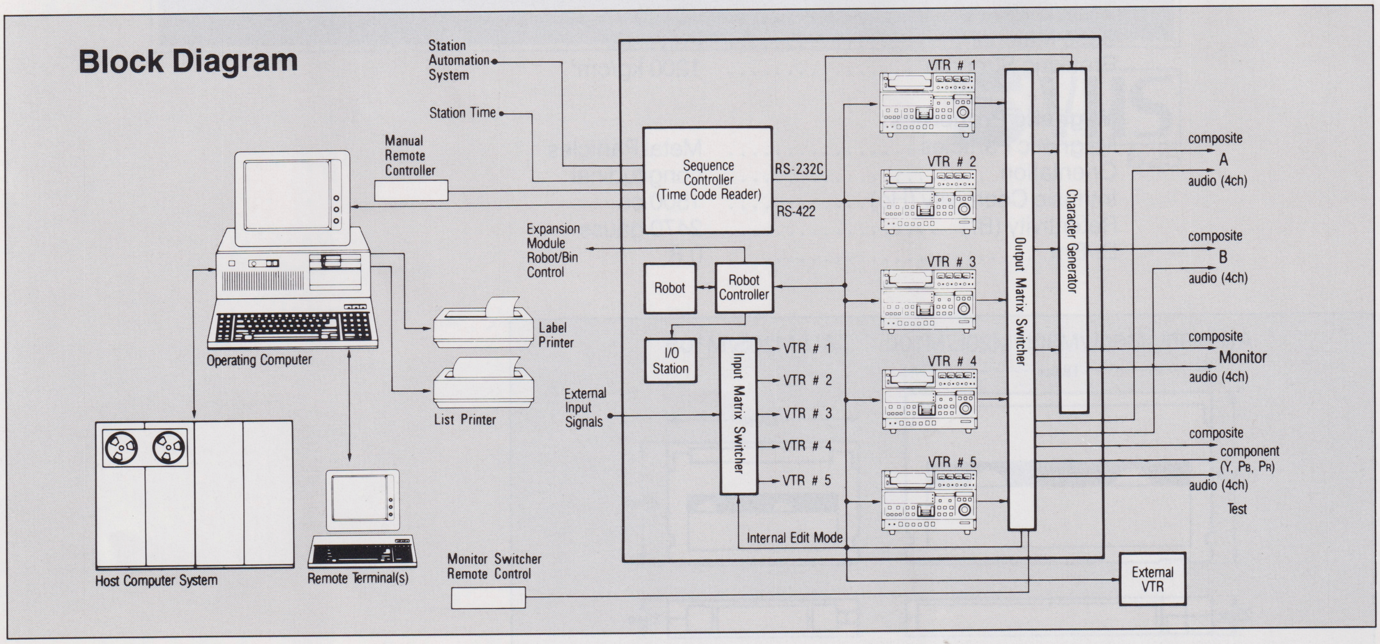
●M.A.R.C.-II/400



●M.A.R.C.-II/1200

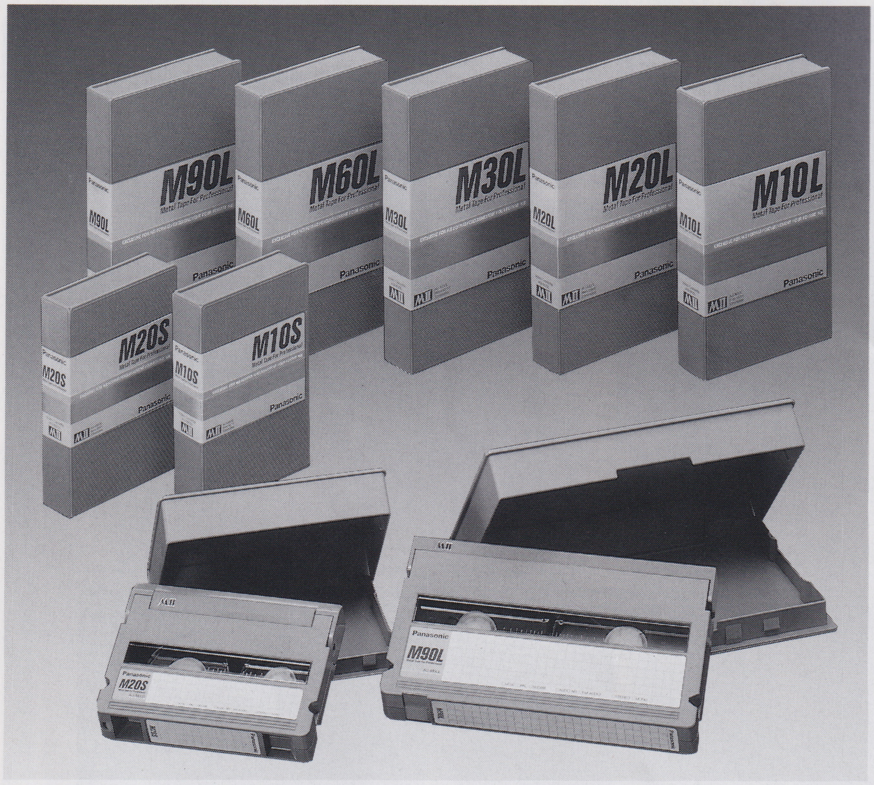


Block Diagram



1/2″ Video Cassette Tape

MII Metal Particle Tape Cassettes



- The use of pure iron particles boosts the magnetic characteristics far above those of conventional cobalt ferric oxide tape.
- This high-density formulation of ultra-fine metal particles also boasts a −10 dB improvement over conventional tape in the carrier-to-noise ratio.
- Low noise is achieved by a unique binding of a uniform layer containing ultra-fine metal particles onto an extremely smooth base film and then smoothing the surface by an improved calendering process. The uniformity and precision of this surface also reduces dropouts.
- The newly developed binder system increases the magnetic layer durability and maintains a clear, sharp picture and stable tape travel through hundreds of playbacks.

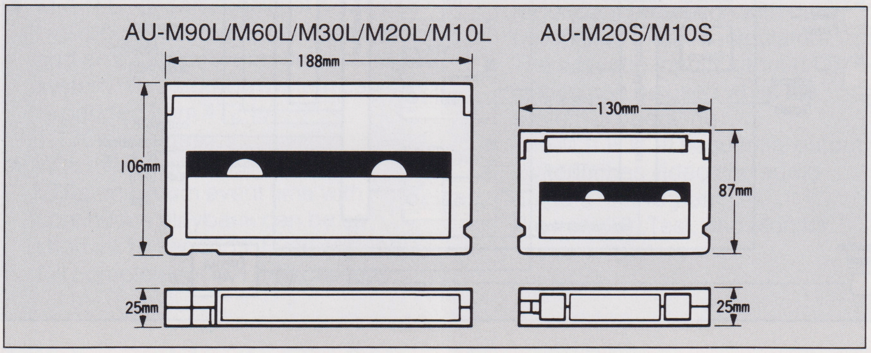
Technical Specification

Physical Properties:

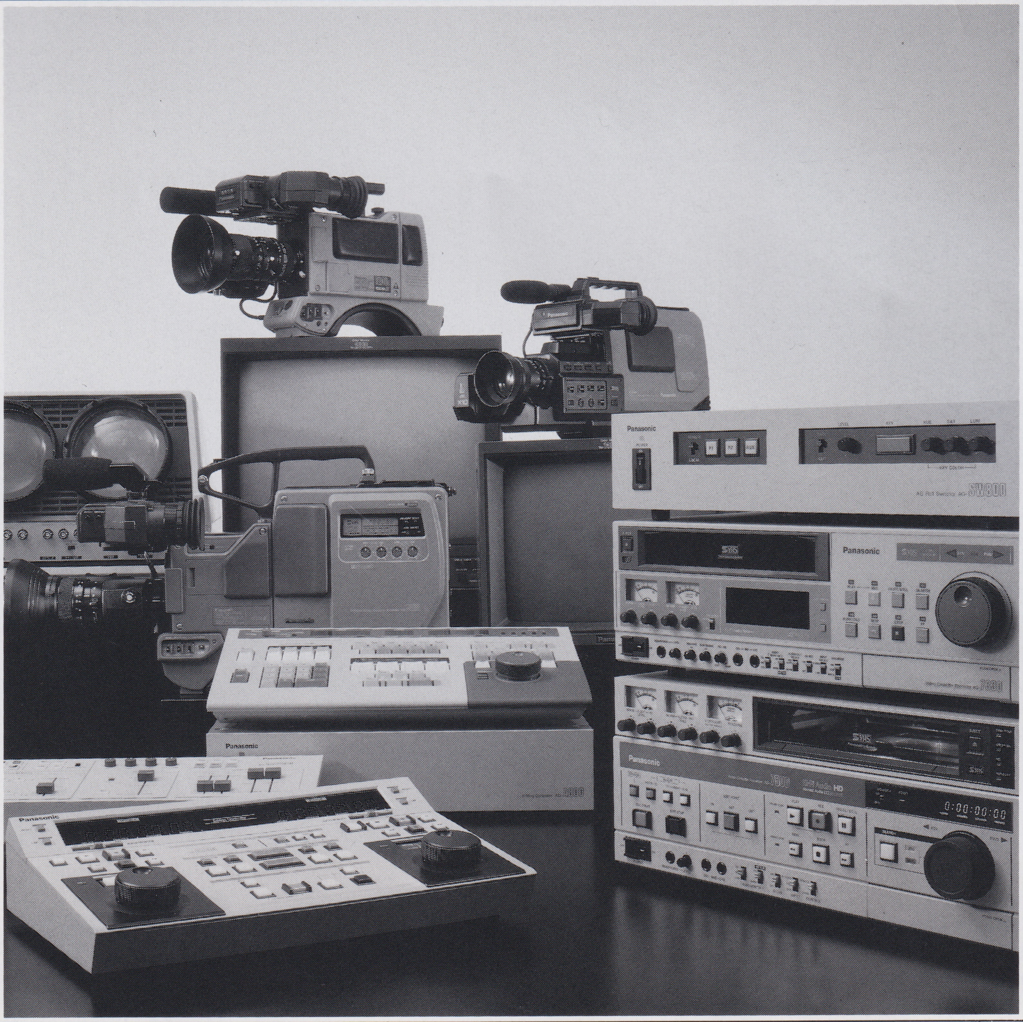
Length/weight	AU-M90L:	389 m/97 min* 290 g
	M60L:	267 m/67 min* 250 g
	M30L:	145 m/36 min* 220 g
	M20L:	96 m/24 min* 200 g
	M10L:	51 m/12 min* 190 g
	AU-M20S:	96 m/24 min* 130 g
	M10S:	51 m/12 min* 120 g
		*Actual time
Width		12.65 ±0.01 mm
Tape Thickness		13.5 ±0.5 μm
Base Material		Polyester
Breaking Strength		1200 kg/cm^2

Magnetic Properties:

Magnetic Particles	Metal Particles
Orientation	Longitudinal
Intrinsic Coercivity (Hc)	1500 oe
Retentivity (Br)	2470 gauss
Br/Bm	0.8



Professional Video Systems

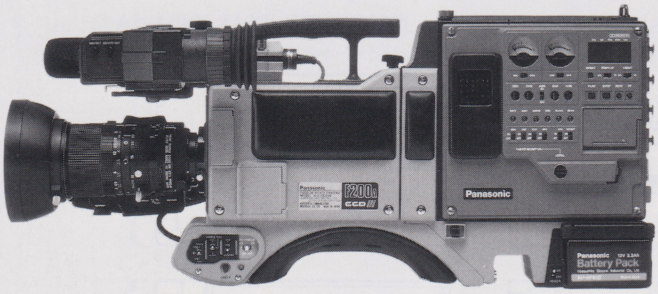


WV-F200A 3-CCD Colour Video Camera

Features

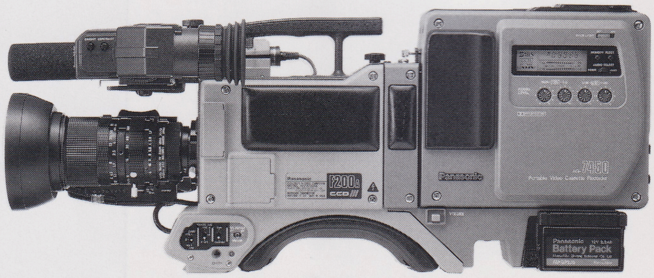
- 3-CCD pick-up image sensors (291,000 picture elements with an F1.4 prism).
- 620 lines horizontal resolution (typical).
- 57 dB high S/N ratio (typical).
- Automatic function (white/black balance).
- Viewfinder display.
- Gain selection (0 dB, +9 dB and +18 dB).
- Colour matrix masking circuit.
- Separated Y/C outputs for S-VHS recorder.
- 3-position aperture circuits.
- Gen-lock capability.
- EBU standard colour bar.
- Combination with M-II (AU-400) for Camera/recorder application.
- Combination with S-VHS (AG-7450) for Camera/recorder application.

Camera/Recorder System



WV-F200A with AU-400 (MII Recorder)

Camera/Recorder System



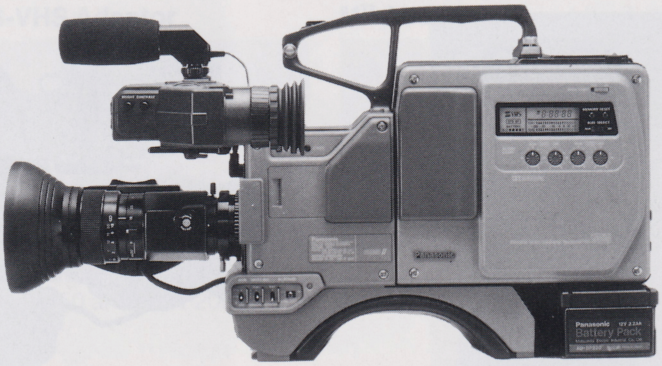
WV-F200A with AG-7450 (S-VHS Recorder)

WV-F70 2-CCD Colour Video Camera

Features

- 2-CCD pick-up image sensors (384,700 picture elements with high precision F1.4 prism)
- High resolution of 500 lines (typical)
- High S/N ratio 55 dB (typical)
- RGB colour stripe filter (C-ch)
- Built-in variable electronic shutter (1/250, 1/500, 1/1,000)
- 2H vertical enhancer
- Gain selection (−6 dB, 0 dB, +3 dB, +9 dB, +12 dB and +18 dB)
- Viewfinder display
- Automatic function (white/black balance)
- Gen-Lock capability
- EBU standard colour bar
- Combination with S-VHS portable VTR (AG-7450) for camera/recorder application
- Connection to various types of VTRs
- Usable as a STUDIO camera

Camera/Recorder System



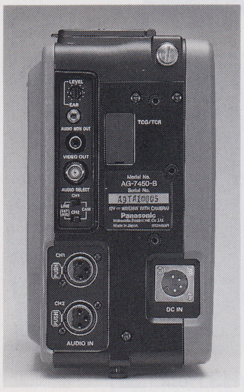
WV-F70 with AG-7450 (S-VHS Recorder)

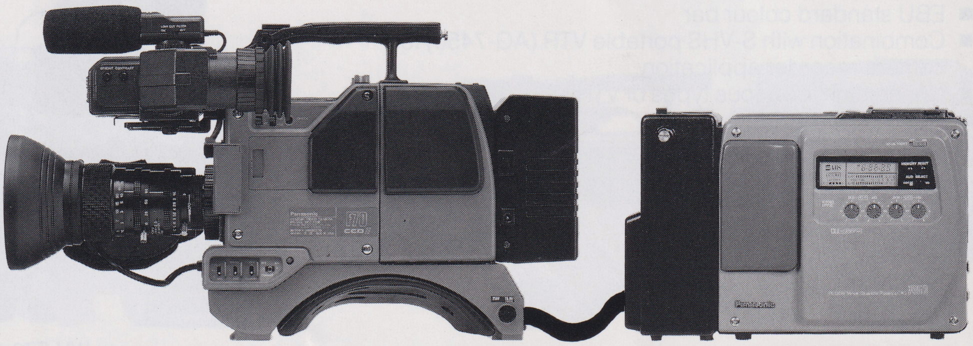
Portable VTR

AG-7450 S-VHS Portable Video Recorder

Features

- S-VHS for high quality video recording and playback
- Compact and light weight
- Rugged construction
- Highly reliable 2 reel motors
- Anti-rolling system.
- Rotary erase heads for clear assemble recording.
- Amorphous video heads for improved S/N ratio.
- Linear audio 2ch with Dolby* NR.
- Hi-Fi audio record/playback.
- Independent input level adjustment for 4 channels.
- LCD audio level indicator
- Linear tape counter (with back up).
- XLR audio input connector.
- XLR DC input connector.
- TCG/TCR acceptable (AG-F745: optional)
- VTR adaptor (AG-S745: optional)
- Colour framing function.
- Half loading system.
- Time Code Recording/Playback capability (Including VITC).





WV-F70

AG-7450 with AG-S745

System Options

AG-S745 VTR Adaptor

Features
- Attaches to AG-7450, for use as separate portable Video Recorder
- Takes up one rechargeable battery pack (AG-BP212)
- Y/C Separate circuitry
- 5-Pin remote control terminal
- Synchro edit terminal (playback)
- Connectable with 14-pin/10-pin camera
- Colour framing circuitry

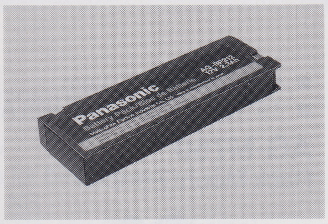
AG-F745 Time Code Generator/Reader

Features
- Attaches to AG-7450
- Compact and Light weight
- VITC/LTC/UB generator/reader
- REC RUN/FREE RUN Switchable
- VITC • LTC/VITC/OFF Switchable

AU-BP220
Battery Pack

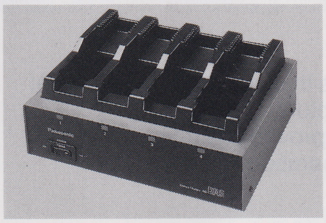
Rechargeable battery pack for AG-7450 with Camera

AG-BP212
Battery Pack



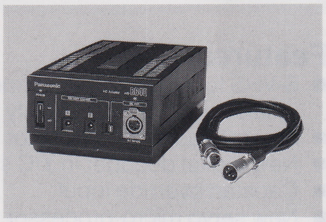
Rechargeable battery pack for AG-7450 with AG-S745

AG-B745
Battery Charger



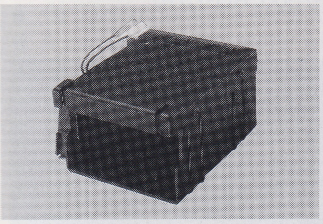
Battery charger for AG-BP220

AG-B640
AC Adaptor/Charger



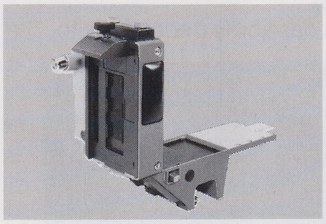
Supplies DC power/ Battery Charger for AG-BP212

AG-M745
Battery Holder



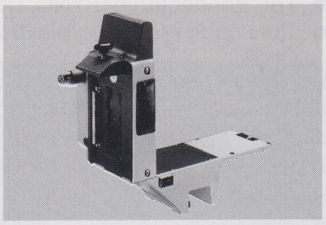
Camera-base mounted battery holder for AG-BP220

WV-VT12
S-VHS Adaptor



Docking Adaptor for AG-7450 and WV-F200A

WV-VT10
MII Adaptor



Docking Adaptor for AU-400 and WV-F200A

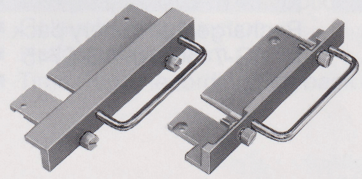
Editing VTR

AG-7500 S-VHS Editing Video Cassette Recorder

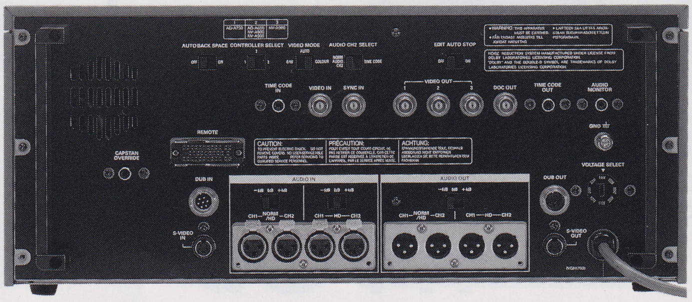
Features

- S-VHS for high resolution (more than 400 lines of horizontal resolution) and High Quality picture.
- Amorphous video heads for improved S/N ratio.
- New digital decoder in Y/C separation circuit.
- Capstan override input.
- New servo micro-processor.
- Hi-Fi audio record/playback capability.
- Improved audio quality: Acoustic Cerafine Capacitors for better quality hi-fi sound.
- Linear tape counter (hour, minute, second and frame).
- 7-Pin dub terminal.
- 4-Pin S-Video terminal.
- TBC connectable (SYNC, DOC).
- Time code recording/playback capability (recordable to CH2).
- Linear audio 2ch with Dolby* NR.
- Edit in and out point presettable.
- Audio mixing function (CH2).
- Auto-prompting illuminated switches.
- Auto back space capability.
- XLR terminal (audio: −6 dB/0 dB/+4 dB switchable).
- Front loading system.
- 19″ rack mountable (with AG-M750).

AG-M750
Rack Mount Adaptor



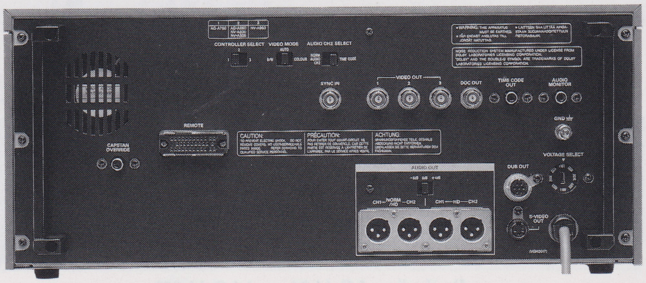
19″ Rack Mount Adaptor for AG-7500, AG-7510



AG-7510 S-VHS Video Cassette Player

Features

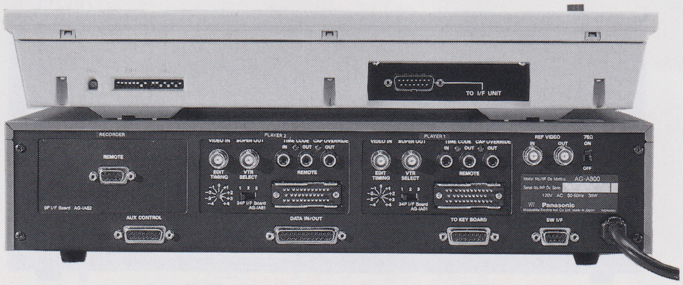
- S-VHS/VHS playback
- Amorphous video heads for improved S/N ratio
- Capstan override input
- FM audio playback capability
- Acoustic Cerafine Capacitors for better quality hi-fi sound
- Linear audio 2 ch with Dolby* NR
- Linear tape counter (hour, minute, second and frame)
- 7-pin dub-out capability
- TBC connectable (SYNC, DOC)
- Time Code playback capability
- XLR terminal (audio out: −6 dB/ 0 dB/+4 dB switchable)
- Auto back space capability
- Front loading system
- 19″ rack mountable (with AG-M750)
- Audio output level meter with Hi-Fi/normal selector



Editing System

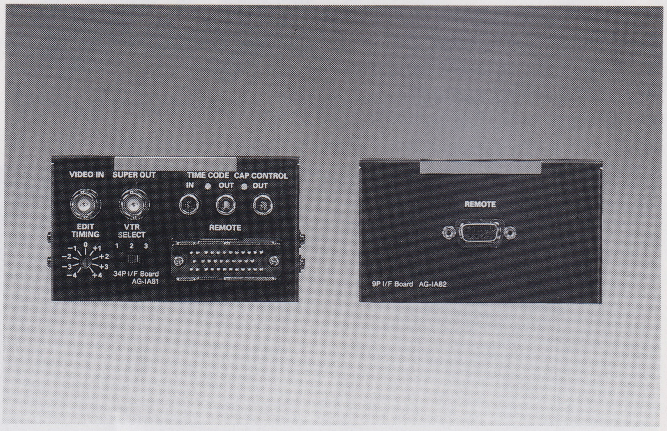
AG-A800 Multi Editing Controller

Features
- 128-event editing memory.
- A/B roll editing.
- 9-Pin serial/34-Pin parallel remote control capability via optional interface adaptors.
- Capstan override control.
- Single search dial.
- Audio split editing.
- AUX control.
- Convenient mark in/out.
- Space-saving separate design.
- Editing data input/output function (RS-232C).
- Switcher interface (optional AV Switcher AG-SW800).



[Including AG-IA81 and AG-IA82]

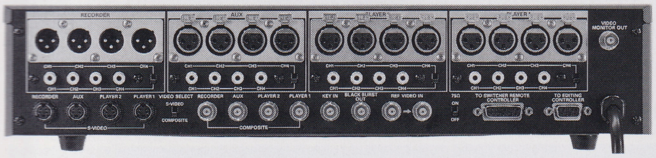
AG-IA81 34-pin Interface Board (option)
AG-IA82 9-pin Interface Board (option)



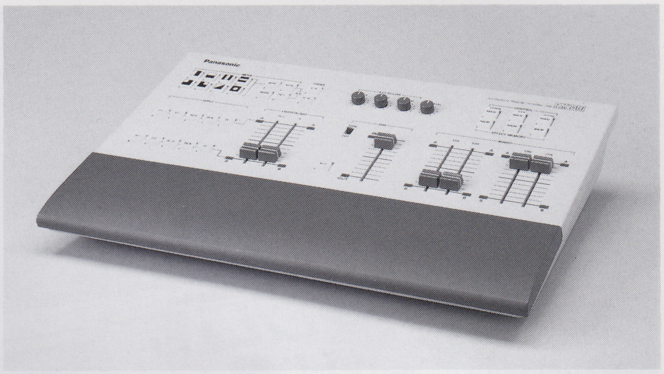
AG-SW800 AV Switcher

Features

- S-Video (4-pin) and composite (BNC) video input/output
- XLR and PHONO audio input/output
- Built-in wipe and dissolve pattern generator
- Downstream key with colour (Hue, Sat, Lum)
- Built-in sync generator
- A/B roll editing with AG-A800
- Easier operation with optional AV switcher remote controller (AG-RM800)
- Three inputs (PLAYER 1, PLAYER 2, AUX)
- 19″ rack mountable
- Black burst output terminal (BNC)
- CUT/FADE select switch
- Downstream key input (composite)

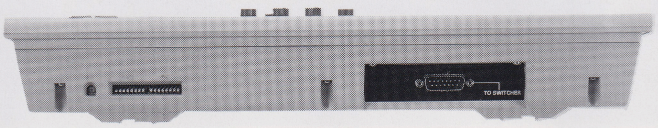


AG-RM800 AV Switcher Remote Controller

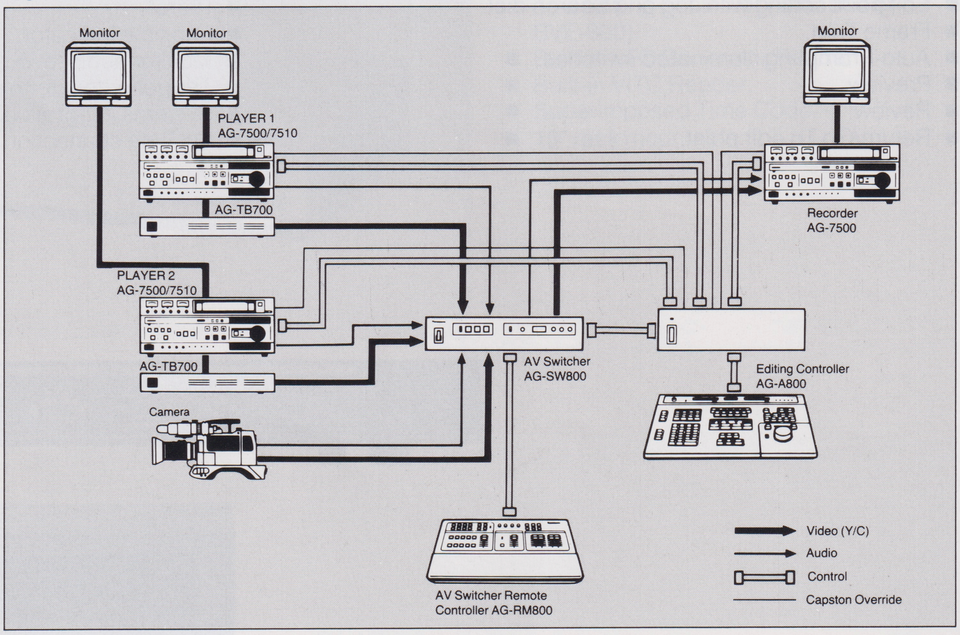


Features

- Remote, manual control of AG-SW800 for special effects
- Choice of 8 different wipe patterns
- Downstream key for cut or fade functions; manually operated fading with lever is also possible
- Selection from among 5 inputs (P1, P2, AUX, BK, W) for bus A and B
- Normal wipe, reverse wipe and dissolve
- Independent audio/video faders
- Equipped with 4 audio faders
- Video fader H (horizontal)/V (vertical) separation
- Effect memory for automatic editing



System Chart

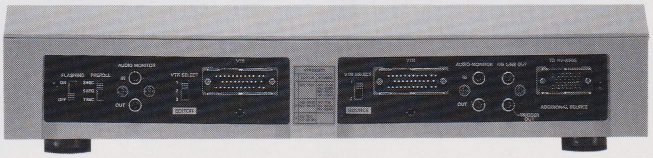


Editing System

AG-A750 Editing Controller

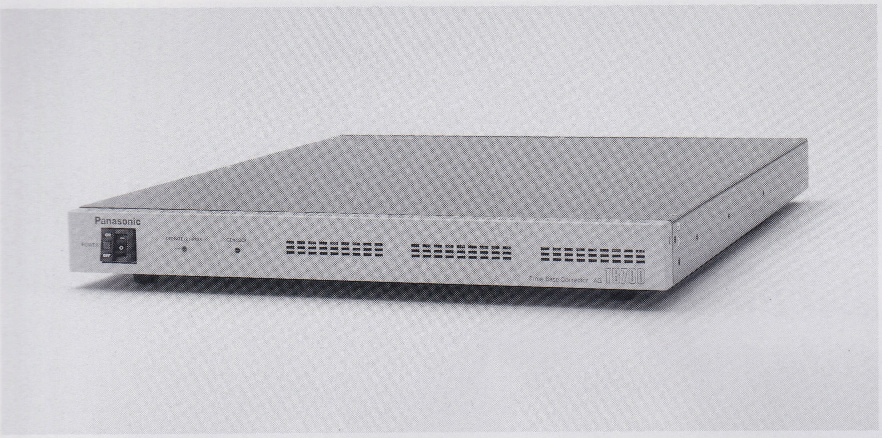
Features

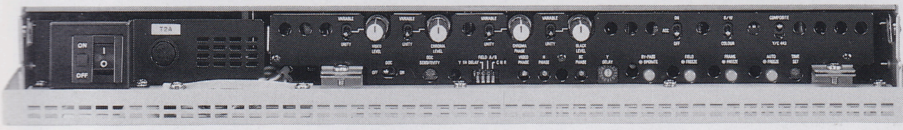
- Automatic editing controller.
- Edit point setting with Jog and Search dial.
- Frame Trim.
- Auto-Prompting illuminated switches.
- Preview.
- Review.
- Return/Go To edit point.
- LED frame counter.
- Preroll.
- Lap time indicator.
- Monitor audio level adjustment.
- Trigger output terminal (RCA type).
- Systems integration.
- On-Line connection.



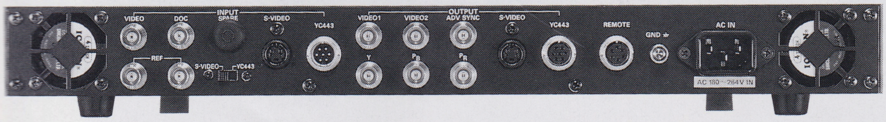
Panasonic
Professional Video Systems

AG-TB700 Time Base Corrector with Y/C Terminal





Front

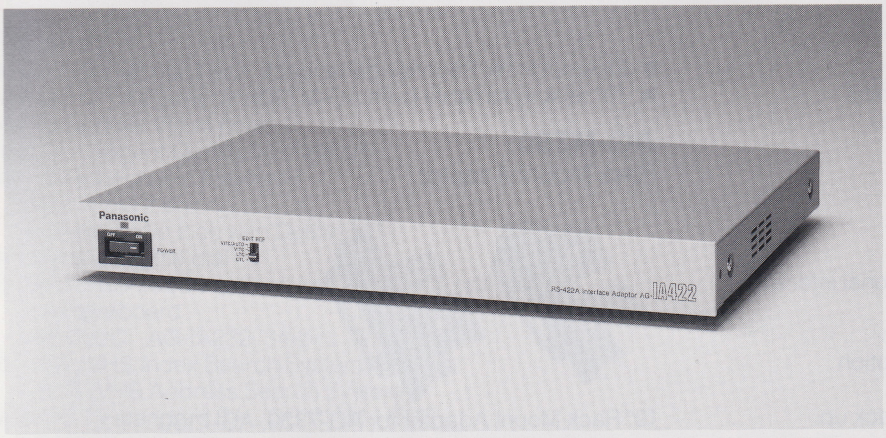


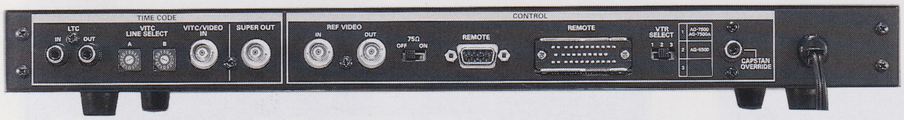
Rear

Features

- 8-Bit, 4:2:2 sampling system (both component and Y/C).
- Wide-range comb filter ensures high resolution.
- S-Video (4-pin) input and output terminal.
- Component (Y, P_B, P_R) signal output terminal.
- Freeze functions:
  - Switchable for frame or field.
  - Auto freeze function activates in case of interruption in input signal.
  - Strobe freeze and time setting via remote controller (Option).
- Unlimited correction range thanks to frame memory.
- Dropout compensation circuit.
- Y/C Delay is adjustable by digital circuit.
- Automatic adjustment of Chroma Level by ACC circuit.
- Built-in Black Stretch Circuit.
- Level, Phase, Freeze, By-pass/Operation can be controlled by Remote Controller.
- 19″ Rack mountable.

AG-IA422 9P/34P Interface Adaptor





Features

- Conversion from a 34-pin remote connector to a 9-pin remote connector on a editing controller (BVE-900 or BVE-800).
- Built-in LTC Generator/Reader.
- Built-in VITC Reader.
- Superimposed Time Code.
- 19″ rack mountable.

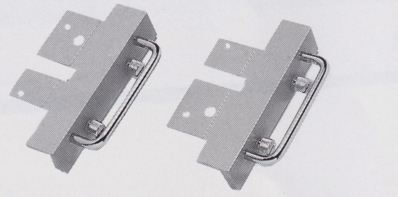
Multi Purpose VTR

AG-7330 S-VHS Multi-Purpose VTR

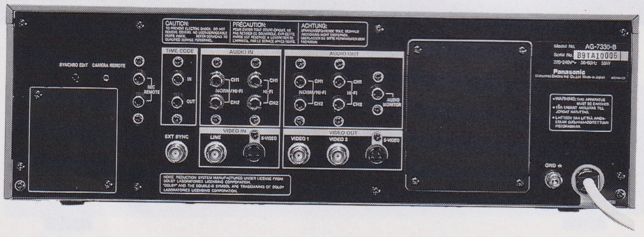
Features

- S-VHS/VHS recording/playback.
- Amorphous video heads for improved S/N ratio.
- Double Fine Slow motion (GT4W Video head).
- High-Reliability IQ Mechanism.
- 4-channel audio.
  - •Hi-Fi audio 2ch.
  - •Linear audio 2ch with Dolby* NR.
- Jog and shuttle dial.
- 34-pin/RS-232C interface capability via optional interface board.
  34 pin Interface board...AG-IA34: Option
  RS-232C Interface board...AG-IA232: Option
- On screen initial set (Non-Volative memory).
- Auto repeat/random access with memory back up.
- Multi-TV standard PAL/CCIR**/M-NTSC.
  **VHS only.
- VISS (VHS Index Search System)/
  VASS (VHS Address Search System).
- Synchro edit.
- Video sensor recording.
- Framing servo circuitry for clear editing results.
- Rotary erase heads.
- External sync input.
- Digital decoder for Y/C separation.
- 8-digit real-time counter.
- External timer Recording/Playback.
- 19″ rack mountable (with AG-M730).

AG-M730
Rack Mount Adaptor



19″ Rack Mount Adaptor for AG-7330, AG-7130



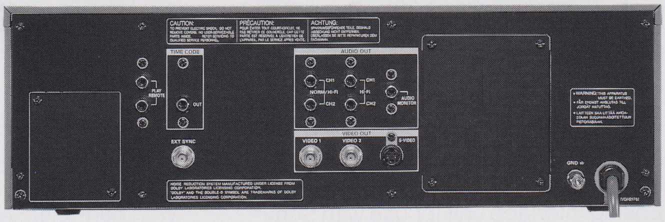
Panasonic
Professional Video Systems

AG-7130 S-VHS Video Cassette Player

S VHS
625

Features

- S-VHS/VHS playback
- Double Fine Slow motion
- Amorphous Video head
- IQ (Intelligent Quest) Mechanism
- 4-channel audio playback
  - •FM audio 2 ch
  - •Linear audio 2 ch with Dolby* NR
- Jog and shuttle dial
- 34-pin/RS-232C interface capability with optional Interfaceboard (RS-232C: AG-IA232, 34-pin: AG-IA34)
- VISS (VHS Index Search System)/ VASS (VHS Address Search System)
- Multi-TV standard PAL/CCIR**/M-NTSC [**VHS only]
- External sync input
- EBU Time Code playback capability
- Large function Display
- 19″ rack mountable (with AG-M730)

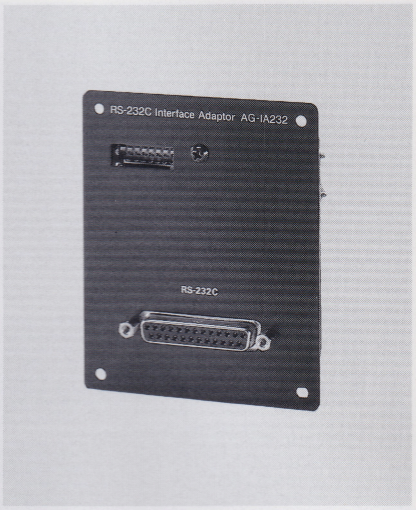


System Options

AG-A730
RS-232C Remote Controller

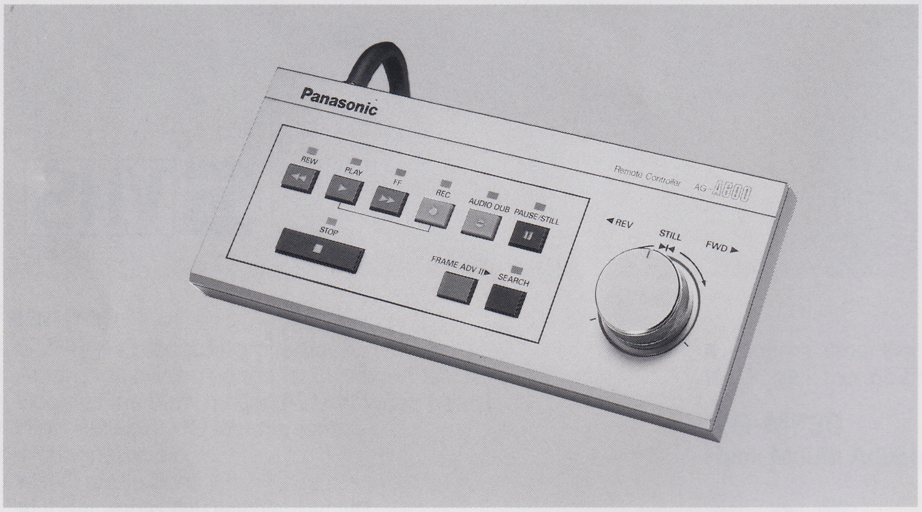
Multi-function remote controller with Jogg/Shuttle and LCD display

AG-IA232
RS-232C Interface Board



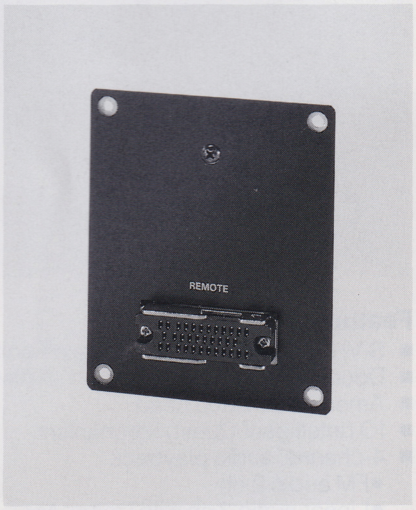
Attaches to AG-7330, AG-7130

AG-A600
34-Pin Remote Controller



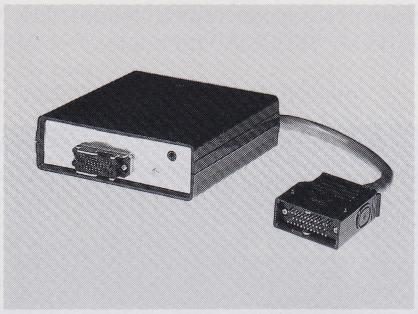
Remote controller with search dial

AG-IA34
34-Pin Interface Board



Attaches to AG-7330, AG-7130

IFP-44
Machine Control Interface Box

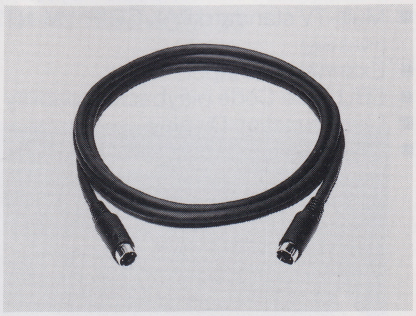


Editing interface unit for use with Sony®
RM-440 and Panasonic 34-pin Control
VCRs.

AG-C70A/C71A
S-Video (4P) Cable (3 m/5 m)

With non-release locking

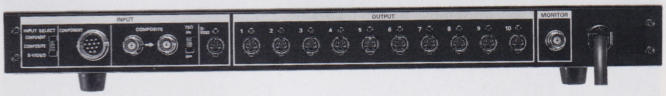
AG-C70/C71
S-Video (4P) Cable (3 m/5 m)



AG-DA700 Video Distributor

Features

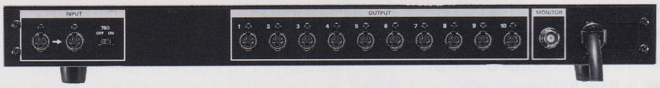
- Switchable component (12-pin)/composite (BNC)/S-Video (4-pin) input terminals
- Simultaneous separated Y/C dubbing for 1 to 10 VTRs
- Composite monitor output terminal
- Test terminal on front panel for easy maintenance
- 19″ rack mountable



AG-DA750 Video Distributor

Features

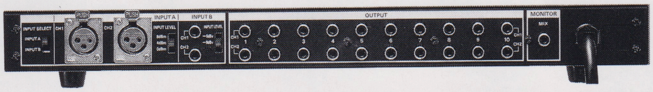
- S-Video (4-pin) input terminal with loop-through capability
- Simultaneous separated Y/C dubbing on 1 to 10 VTRs
- Composite monitor output terminal
- Test terminal of front panel for easy maintenance
- 19″ rack mountable

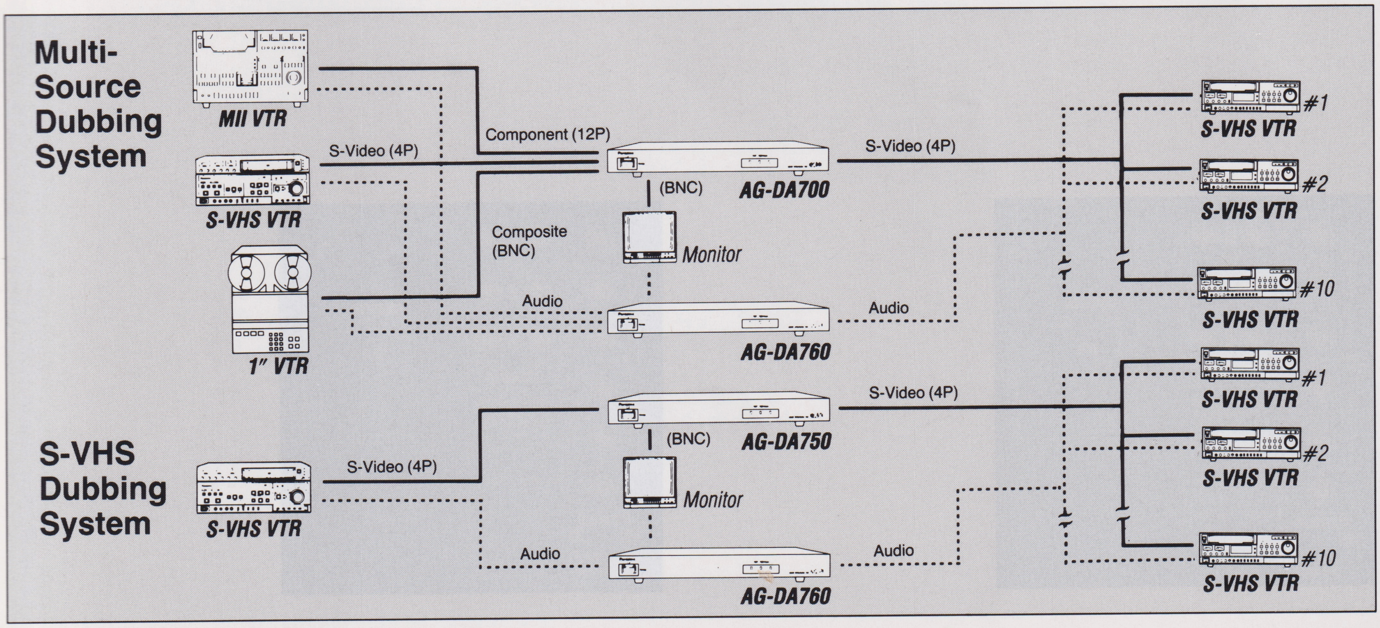


AG-DA760 Audio Distributor

Features

- XLR and RCA input terminals
- Simultaneous dubbing of two channels (ch1/ch2) for 1 to 10 VTRs
- Switchable input levels
- Monitor output (MIX) for maintenance use
- Test terminal for easy maintenance
- 19″ rack mountable

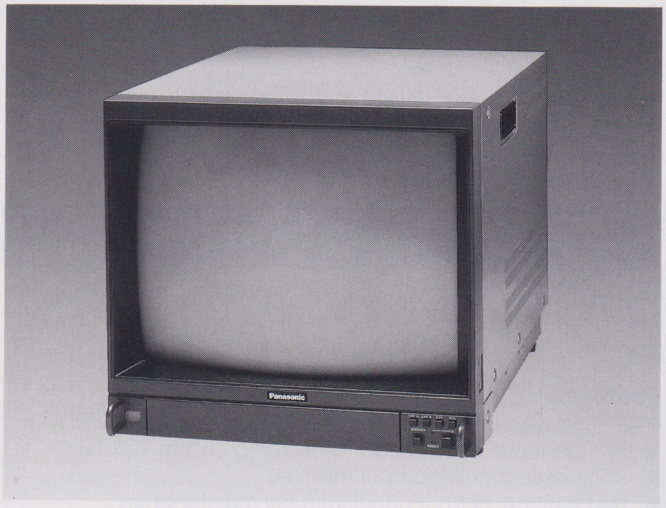




Monitors

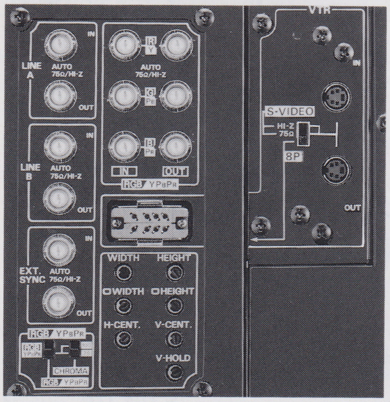
BT-D2020PY

20″ Diagonal Colour Video Monitor



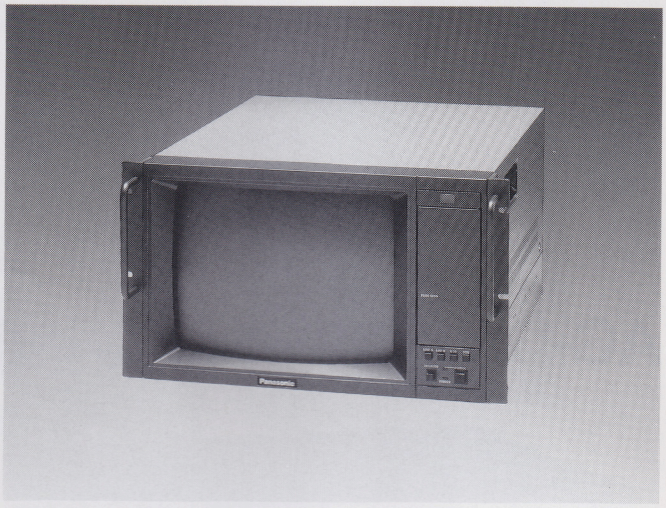
Features

- Complete S-VHS and Y/P_B/P_R compatibility
- Line A/Line B/VTR/Component selectable
- Preset picture on/off
- Line A/B split
- Simple white balance adjustment
- Switchable AFC time constant
- Pulse cross circuit
- Normal/underscan switch
- Blue signal only switch
- Colour/auto/mono mode selectable
- Trap filter on/off
- Tally remote connectors with panel lamp
- Rack mountable



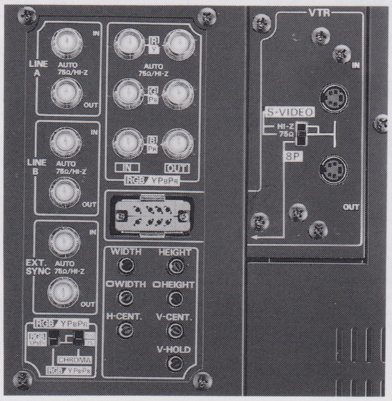
BT-M1420PY

14″ Diagonal Colour Video Monitor

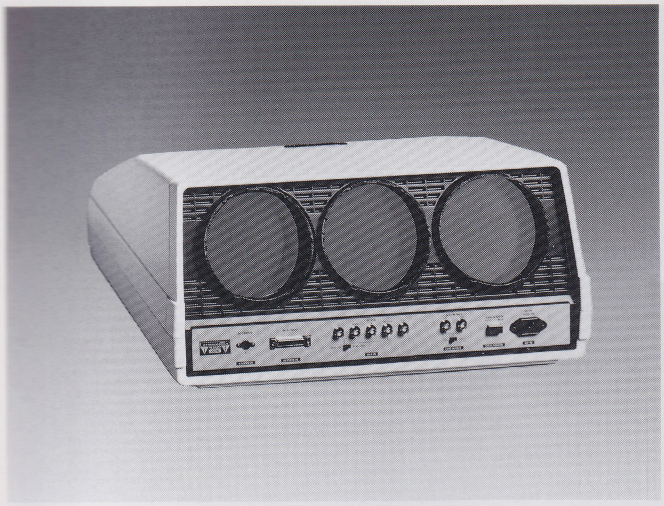


Features

- Complete S-VHS and Y/P_B/P_R compatibility
- Line A/Line B/VTR/Component selectable
- Preset picture on/off
- Line A/B split
- Simple white balance adjustment
- Switchable AFC time constant
- Pulse cross circuit
- Normal/underscan switch
- Blue signal only switch
- Colour/auto/mono mode selectable
- Trap filter on/off
- Tally remote connectors with panel lamp
- Rack mountable

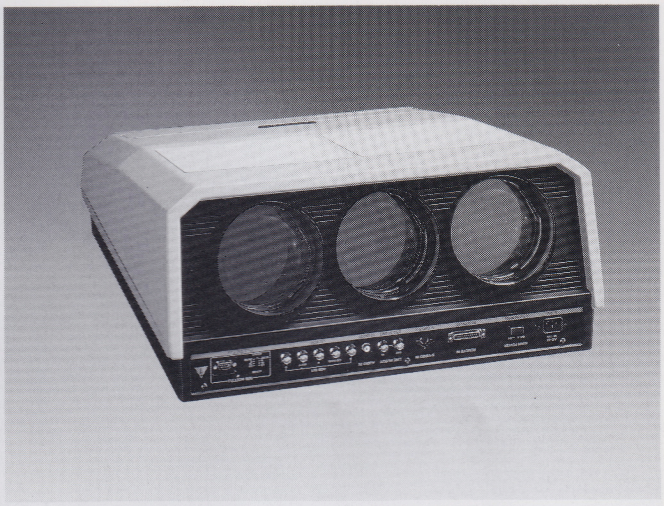


PT-102Y/302Y
Colour Video Projector



Features
- S-VHS compatibility
- Bright 650 lumens output
- 2000-character data/graphics display
- 1000-line RGB resolution
- Dual focus 4-element hybrid lens system
- High-power liquid-cooled CRTs
- Blue mode selector
- S-Video/Line/RGB input selectable
- PAL/SECAM/NTSC3.58/NTSC4.43 compatible
- Screen size
  - PT-102Y: 50″–120″ diagonal
  - PT-302Y: 150″–300″ diagonal

PT-106
80″–120″ Colour Video/Data Projector



Features
- Variable Scan Rate for operation at virtually any scanning frequency within the range of 15 kHz to 37 kHz horizontally and 50 Hz to 100 Hz vertically
- Bright 550 lumens output and 1100 line RGB resolution
- Newly-developed Hybrid IMF electron gun/I cathode CRT
- High power liquid-cooled CRTs
- Optical coupling lens system
- Dual focus 5-element hybrid lens configuration
- S-Video/Line/RGB1/RGB2 selectable
- 4-System compatibility for PAL/SECAM/NTSC3.58/NTSC4.43

Video Camera/Recorder

AG-450 S-VHS Integrated Camera/Recorder

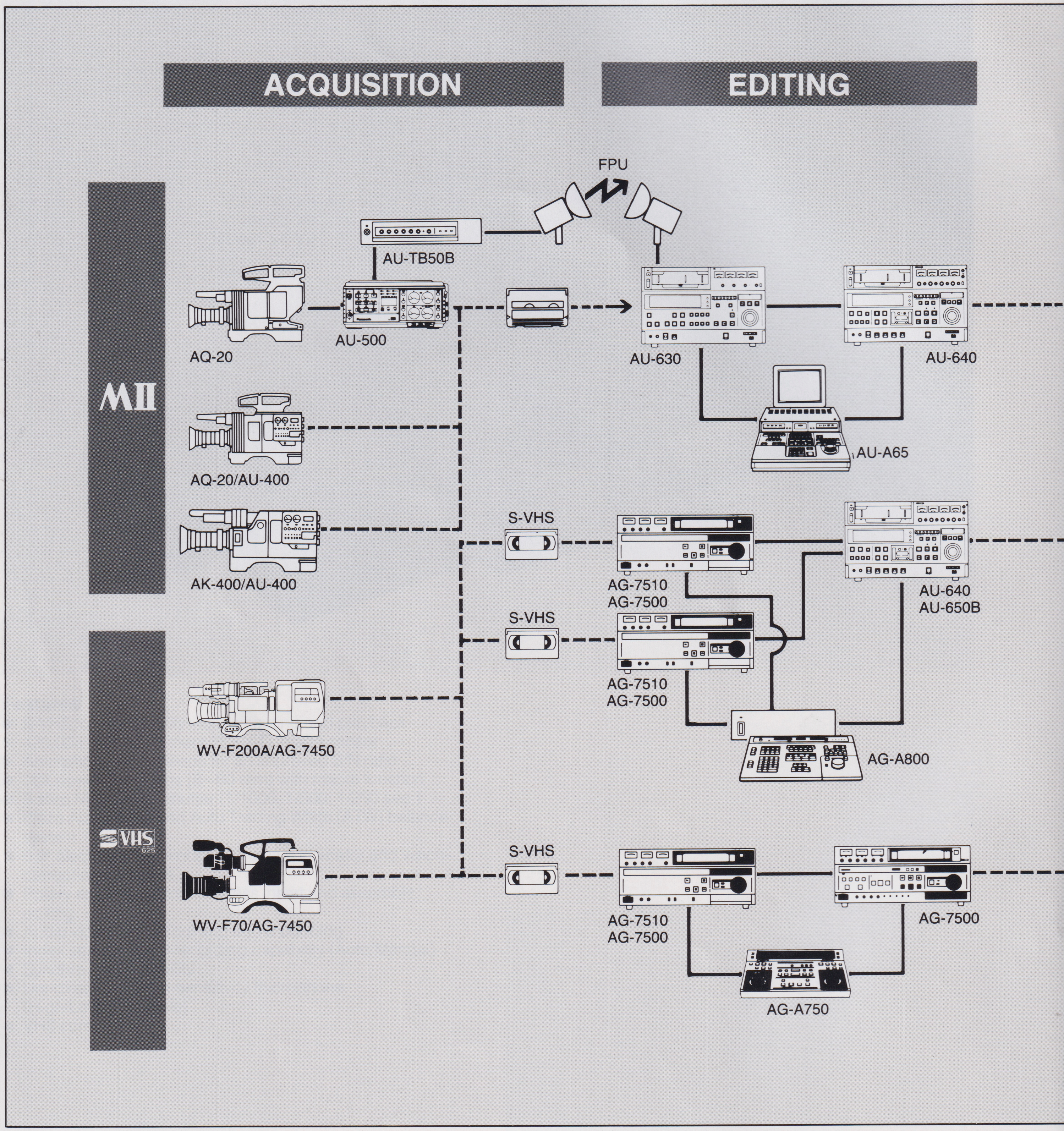
Features

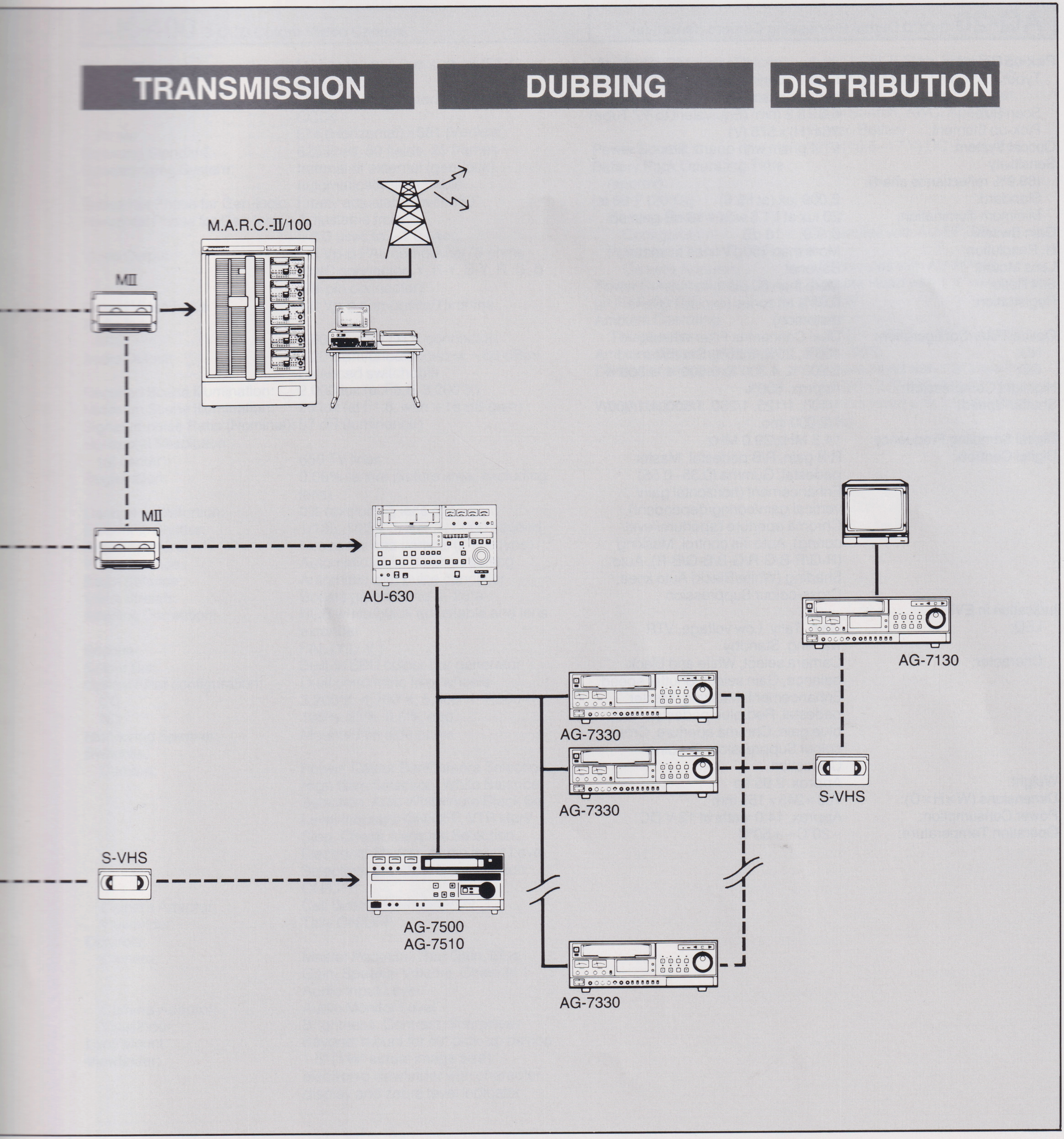
- S-VHS for high quality video shooting and playback
- 420,000 picture element ½″ CCD image sensor
- Amorphous video heads for an improved S/N ratio
- 10X power zoom lens (8~80 mm) with macro function
- 3-step high speed shutter (1/1000, 1/500, 1/250 sec.)
- Piezo Auto Focus and Auto Tracing White (ATW) balance system
- 0.9″ electronic viewfinder with status indicator and vision-correcting eyepiece
- Rotary erase head for noiseless insert and assemble editing
- Audio video fade in/out and audio dubbing
- Index search signal recording capability (Auto/Manual)
- Synchro edit capability
- Uni-directional high-sensitivity microphone (High/Low selectable)
- VHS compatibility

S-VHS Video Cassette Tape

- Use S-VHS tapes whenever you record in S-VHS mode. S-VHS tapes have densely packed, ultrafine magnetic particles which allow the extraordinary resolution that distinguishes S-VHS picture quality.
- High-performance S-VHS tapes also have improved tape travel and durability—use them even in VHS mode the highest recording quality.
- **NV-SE30EM** .... 30 min.
  NV-SE60EM .... 60 min.
  NV-SE180EM .... 180 min.

½″ Inter Format System Chart




TRANSMISSION
DUBBING
DISTRIBUTION
M.A.R.C.-Ⅱ/100
MⅡ
MⅡ
AU-630
S-VHS
AG-7500
AG-7510
AG-7330
AG-7330
AG-7330
S-VHS
AG-7130

Specifications

AQ-20 3-CCD Digital Processing Camera (tentative)

Pick-up Device:	
Type;	Frame interline transfer ⅔″ CCD image sensor (3)
Scan Size;	6.6×8.8 mm^2 (Equivalent to ⅔″ Tube)
Pick-up Element;	754 (H)×575 (V)
Optical System:	f/1.4 prism with quartz filter
Sensitivity (89.9% reflectiance chart):	
Standard;	2,000 lux (at f/5.6)
Minimum illumination;	20 lux at f/1.6 with +18 dB gain up
Gain Switch:	0, +9, +18 dB
H. Resolution:	More than 750 TV lines at center
Lens Mount:	Bayonet
S/N Ratio:	More than 60 dB
Registration:	0.05% all zones (excluding lens distortion)
Optical Filter Configuration:	Dual Concentric Filter Wheels
ND;	100%, 25%, 6.25%, Star Filter
CC;	3,200°K, 4,300°K, 5,600°K, 6,300°K
Highlight Compression:	Approx. 600%
Shutter Speed:	1/100, 1/125, 1/250, 1/500, 1/1,000, 1/2,000 sec.
Digital Sampling Frequency:	14.5 MHz/29.0 MHz
Digital Controls:	R/B gain, R/B pedestal, Master pedestal, Gumma (0.35–0.55) Enhancement (horizontal gain/vertical gain/coring/dependent), Chroma aperture (aperture/level/coring), Auto iris control, Masking (R-G/R-B/G-R/G-B/B-G/B-R), Auto Shading (White/Black) Auto knee, Cross-colour Suppression
Indication in EVF:	
LED;	Gain, Tally, Low voltage, VTR warning, Standby
Character;	Camera select, White and black balance, Gain select, Shutter speed, Enhancement, Masking, Master pedestal, Red/blue pedestal, Red/blue gain, Chroma aperture, Cross-colour Suppression, Shading Correction,
Weight:	Approx. 2.95 kg
Dimensions (W×H×D):	103×245×155 mm
Power Consumption:	Approx. 14.0 watts at 12 V DC
Operation Temperature:	−20°C∼+50°C

AK-400 3-CCD Colour Video Camera

Pick-up System:	Middle Index prism system (F1.4) with quartz filter
Image Sensor:	Three 2/3″ frame interline transfer CCDs
Pixels;	574 (Horizontal) × 581 (Vertical)
Scanning Standard:	625 lines, 50 fields, 25 frames
Synchronizing System:	Internal or external (gen-lock), automatically switchable
Subcarrier Phase for Gen-lock:	Freely adjustable over 360°
Horizontal Phase for Gen-lock:	Adjustable from +3.0 usec to −1.0 usec.
Video Output	1.0 Vp-p PAL composite/75 ohms (BNC connector) Y, R-Y, B-Y, R, G, B (79-pin connector)
Return Video Input:	1.0 Vp-p composite/75 ohms
Audio Input:	
MIC;	−60 dBm × 1 (XLR connector)
Audio Output:	−20 dBm/unbalanced or −60 dBm/balanced switchable
Required Scene Illumination:	2,000 lux (at F5.6, 3,200°K)
Minimum Scene Illumination:	20 lux (at F1.6, with +18 dB gain)
Signal-to-noise Ratio (Nominal):	57 dB (luminance)
Horizontal Resolution (at center):	650 TV lines
Registration:	0.05% (entire picture area, excluding lens)
Geometric Distortion:	0% (excluding lens distortion)
Electronic Shutter:	1/125, 1/250, 1/500, 1/1,000 second
Detail/Aperture:	Horizontal and vertical (2-line type)
White Balance:	Automatic white balance setting
Black Balance:	Automatic with pulse canceller
Black Stretch:	Boosts gain around 0–25%
Shading Correction:	RGB white/black adjustable and lens extender
Encoder:	PAL (Y.U.V.)
Colour Bar:	Built-in EBU colour bar generator
Optical Filter configuration:	Dual concentric filter wheels
CC;	3,200°K, 4,700°K, 5,600°K, 7,500°K
ND;	100%, 25%, 6.5%, cap
Monitoring Speaker:	Mounted on side panel
Switches:	
Camera;	Power, Colour Bar/Camera Selection, High Gain Selection, White Balance Selection, Auto White/Auto Black Set, Level Indicator ON/OFF, VTR start/Stop, Check, Lens Iris Selection, Electronic Shutter, Audio Input Level Selection, Standby, Black Stretch ON/OFF
Camera Adaptor;	Call Button, Powr Selector
Viewfinder;	Tally ON/OFF
Controls:	
Camera;	Master Pedestal, Red Gain, Blue Gain, Speaker Volume, Channel 1 Audio Input Level
Camera Adaptor;	Audio Monitor Level
Viewfinder;	Brightness, Contrast, Sharpness
Lens Mount:	Bayonet mount for 2/3″ pick-up device
Viewfinder:	1.5″ (1 3/8″ actual image size) electronic viewfinder with character display and zebra level indicator
Viewfinder Character Display:	Audio level, F-Stop, Filter Position, Gain, Auto Matrix, ON/OFF, DC supply, Shutter, Lens Extender, Black Stretch, AWC, Aperture, Power, Battery
Power Source:	12 V (10.5–17 V) DC, 5 sources
Battery Pack Operating Time (approx): [at 68°F (20°C)]	
Camera/Recorder Configuration;	20 minutes with AU-BP220
Portable VTR Configuration with Camera Adaptor;	120 minutes with AU-BP402
Power Consumption: [at 68°F (20°C)]	Camera Head with 1.5″ viewfinder 13.5 W
Ambient Operating Temperature:	−20°C~+45°C (−4°C~+113°F)
Ambient Operating Humidity:	30%–90%
Dimensions (approx):	Camera Head with 1.5″ Viewfinder 184 (W) × 270 (H) × 411 (D) mm
Weight (approx):	Camera Head with 1.5″ Viewfiner 3.4 kg

Specifications

AU-400 Portable VTR

(General Specifications)

Power Supply:	12 V DC +3 V, −1 V
Power Consumption:	About 20 W
Recording System:	4 rotary heads; 2-track helical scanning
Tape Speed:	66.295 mm/sec.
Tape:	½″ Metal Particle (MP) Tape
Recording Time:	24 minutes (with M20S)
FF/REW Time:	Less than 2 min. with M20S
Operating Temperature:	0°C~40°C (32°F~104°F)
Operating Humidity:	20%~85% RH
External Dimensions (W×H×D):	115×190×200 mm
Weight:	Approx. 3.5 kg without cassette and battery

(Video Specifications)

Television Format:	625 lines, 50 fields
Modulation System:	
Y;	Frequency modulation
C;	Time compressed multiplexing (R-Y, B-Y)
Bandwidth: (Component)	
Y;	25 Hz~5.5 MHz +0.5/−3.0 dB
C;	25 Hz~2.0 MHz +0.5/−3.0 dB
S/N Ratio: (Component)	
Y;	Better than 47 dB
C;	Better than 48 dB
Y/C Delay:	20 ns
K Factor: (Component)	
Y 2T;	Less than 1.5%
C 5T;	Less than 2.0%
Linearity: (Component)	Less than 3%

(Audio Specifications)

Linear (CH1/CH2):	
Frequency Response;	50 Hz~15 kHz +1.0 dB, −2.0 dB 125 Hz~10 kHz, ±1.0 dB
S/N Ratio;	Better than 58 dB at 3% distortion (Dolby NR off)
Distortion;	Less than 0.8% at 1 kHz standard input level
Erase;	−70 dB
Wow and Flutter;	Less than 0.1% rms
Cross Talk;	Less than −55 dB (1 kHz)
FM (CH3/CH4):	
Frequency Response;	20 Hz~20 kHz +1.0 dB, −2 dB
Dynamic Range;	More than 80 dB
Distortion;	Less than 0.5% at 1 kHz standard input level
Wow and Flutter;	Less than 0.005% wrms
Cross Talk;	Less than −65 dB (1 kHz)

(Video/Audio Input)

	79 p Multiconnector

(Video Output Signal)

COMPOSITE OUT:	BNC×1, 1.0 Vp-p 75Ω

(Audio Input Signal)

AUDIO IN:	XLR 3P×4 CH1/CH2 (Linear) 15 kΩ/600Ω balance MIC/LINE/CAM switchable CH3/CH4 (FM) 15 kΩ/600Ω balance MIC/LINE/CH1, CH2 switchable (CH1~CH4 MIC IN phantom power)
TIME CODE IN:	BNC×1, 0.5 Vp-p–8 Vp-p high impedance

(Audio Output Signal)

AUDIO MONITOR OUT:	M3 earphone jack −∞~−20 dBu −8Ω

*Specification are measured by playing back programs through the standard studio VTR AU-650B.

AU-S400 VTR Adaptor

(General Specifications)

Power Supply:	12 V DC
Power Consumption:	5.0 W (Component) 8.4 W (Composite)
Weight:	1.35 kg
Dimensions (W×H×D):	88×365×255 mm
Operating Temperature:	0°C~40°C (32°F~104°F)
Operating Humidity:	20%~80%

(Video Input Signal)

CAMERA IN:	26 P Multiconnector
Y In;	1.0 Vp-p 75Ω
R-Y In;	1.0 Vp-p 75Ω
B-Y In;	1.0 Vp-p 75Ω (Condition; 100% colour bar, with 0% set up)
Video:	BNC×1
Composite;	1.0 Vp-p 75Ω

(Audio Input Signal)

Camera Mic:	26 pin multi-connector 300/600Ω Balanced/−50 dBm

(Accessories)

●Standard:	Shoulder Strap
●Optional:	Carrying Case (AU-H400) Rechargeable Battery Pack (AU-BP220) AC Adaptor (AU-B110)

AU-500 Portable VTR

(General Specifications)

Power Supply:	12 V DC +3 V/−1.0 V
Power Consumption:	42 W (31 W at normal recording, MAX. 70 W with camera)
Recording System:	4 rotary heads; 2-track helical scanning
Tape Speed:	66.295 mm/sec.
Tape:	½″ Metal Particle (MP) Tape
Recording Time:	97 minutes (with M90L)
Search Speed:	±5×
FF/REW Time:	Less than 6 minutes with M90L
Operating Temperature:	0°C~40°C (32°F~104°F)
Operating Humidity:	Less than 85%
Dimensions (W×H×D):	300×120×330 mm
Weight:	7.0 kg without cassette and battery

(Video Specifications)

Television Format:	625 lines, 50 fields
Modulation System:	
Y;	Frequency modulation
C;	Time compressed multiplexing (R-Y, B-Y)
Bandwidth: (Component)	
Y;	25 Hz~5.5 MHz +0.5/−3.0 dB
C;	25 Hz~2.0 MHz +0.5/−3.0 dB
S/N Ratio: (Component)	
Y;	Better than 47 dB
C;	Better than 48 dB
Y/C Delay:	20 ns
K Factor: (Component)	
Y 2T;	Less than 1.5%
C 5T;	Less than 2.0%
Linearity: (Component)	Less than 3%

(Audio Specifications)

Linear (CH1/CH2)	
Frequency Response;	50 Hz~15 kHz +1.0 dB, −2.0 dB 125 Hz~10 kHz, ±1.0 dB
S/N Ratio;	Better than 58 dB at 3% distortion (Dolby NR off)
Distortion;	Less than 0.8% at 1 kHz standard input level
Erase;	−70 dB
Wow and Flutter;	Less than 0.1% rms
Cross Talk;	Less than −55 dB (1 kHz)
FM (CH3/CH4)	
Frequency Response;	20 Hz~20 kHz +0.5 dB, −2.0 dB
Dynamic Range;	More than 80 dB
Distortion;	Less than 0.5% at 1 kHz standard input level
Wow and Flutter;	Less than 0.005% wrms
Cross Talk;	Less than −65 dB (1 kHz)

(Video Input Signal)

VIDEO IN:	BNC ×1, 1.0 Vp-p 75Ω
SC IN:	BNC×1, 2.0 Vp-p 75Ω
SYNC IN:	BNC×1, 4.0 Vp-p 75Ω
CAMERA IN:	26 P Multiconnector
Video In;	1.0 Vp-p 75Ω
Y; In:	1.0 Vp-p 75Ω
R-Y; In:	1.0 Vp-p 75Ω
B-Y; In:	1.0 Vp-p 75Ω
RETURN VIDEO;	1.0 Vp-p 75Ω (Condition; 100% colour bar, with 0% set up)

(Video Output Signal)

VIDEO OUT:	BNC×2
Video Out 1, 2;	Composite out 1.0 Vp-p 75Ω
CTCM OUT:	12 P Multiconnector
Y;	1.0 Vp-p 75Ω
CPR′, PB′;	1.009 V/0.72 Vp-p 75Ω
Y DO Pulse;	NEG
C DO Pulse;	NEG
VHF OUT;	F×1, VHF CH3/CH4 switchable

(Audio Input Signal)

AUDIO IN:	XLR 3P×4, CH1/CH2 (Linear) CH3/CH4 (FM)
CAM/LINE:	
LINE;	+4/−20/−60 dBu switchable 600Ω balanced
CAM;	−20/−30/−60 dBu switchable on Printed Circuit Board 200Ω balanced
TIME CODE IN:	BNC×1, 0.5 Vp-p–8 Vp-p high impedance

(Audio Output signal)

AUDIO OUT:	XLR 3P×4, +4/−20 dBu switchable (within PC Board) 600Ω balanced
TIME CODE OUT:	BNC×1, 2.5 Vp-p low impedance
HEADPHONE OUT:	¼″ phone stereo jack −20 dBu~−∞ (variable) 8Ω

(OTHERS)

Remote 2 IN:	9-pin female (D-SUB)
Remote 2 OUT:	9-pin female (D-SUB)

*Specifications are measured by playing back programs through the standard studio VTR AU-650B.

Specifications

AU-505 Field Player

(General Specifications)

Power Supply:	12 V DC +3.0 V/−1.0 V
Power Consumption:	25 W
Playback System:	4 rotary heads; 2-track helical scanning
Tape Speed:	66.295 mm/sec.
Tape:	½″ Metal Particle (MP) Tape
Playback Time:	97 minutes (with M90L)
Search Speed:	±5×
FF/REW Time:	Less than 6 minutes with M90L
Operating Temperature:	0°C~40°C (32°F~104°F)
Operating Humidity:	Less than 85%
Dimensions (W×H×D):	307×135×342 mm
Weight:	6.5 kg without cassette and battery

(Video Specifications)

Television Format:	PAL; 625 lines, 50 fields
Modulation System:	
Y;	Frequency modulation
C;	Time compressed multiplexing (R-Y, B-Y)
Bandwidth: (Component)	
Y;	25 Hz~5.5 MHz +0.5/−3.0 dB
C;	25 Hz~2.0 MHz +0.5/−3.0 dB
S/N Ratio: (Component)	
Y;	Better than 45 dB
C;	Better than 48 dB
Y/C Delay:	30 ns
K Factor: (Component)	
Y 2T;	Less than 1.5%
C 5T;	Less than 2.0%

(Audio Specifications)

Linear (CH1/CH2):	
Frequency Response;	50 Hz~15 kHz +1.0 dB, −2.0 dB
S/N Ratio;	Better than 52 dB at 3% distortion (Dolby NR off)
Distortion;	Less than 0.8% at 1 kHz standard input level
Wow and Flutter;	Less than 0.1% rms
Cross Talk;	Less than −55 dB (1 kHz)
FM (CH3/CH4):	
Frequency Response;	20 Hz~20 kHz +0.5 dB, −2.0 dB
Dynamic Range;	More than 80 dB
Distortion;	Less than 0.6% at 1 kHz standard input level
Wow and Flutter;	Less than 0.005% wrms
Cross Talk;	Less than −65 dB (1 kHz)

(Video Signal)

VIDEO OUT:	BNC×1
Video Out;	Composite out 1.0 Vp-p 75Ω
Monitor TV Out;	8P×1 1.0 Vp-p 75Ω
VHF IN:	F×1 (Option)
VHF OUT:	F×1 (Option) VHF CH3/CH4 switchable

(Audio Signal)

AUDIO OUT:	PHONO×4 −8 dBu 600Ω unbalanced
TIME CODE OUT:	BNC×1 2.4 Vp-p low impedance
HEADPHONE OUT:	¼″ phone stereo jack −20 dBu~−∞ 8Ω
MONITOR TV OUT:	8P×1 0 dBu 600Ω unbalanced
AUDIO MONITOR OUT:	PHONO×1 0 dBu 600Ω unbalanced

AU-TB50B Time Base Corrector

(General Specifications)

Power Supply:	100~120/220~240 V AC, 50/60 Hz, 12 V DC
Power Consumption:	100 W (120 V AC), 130 V (12 V DC)
Operating Temperature:	0°C~40°C (32°F~104°F)
Operating Humidity:	80% RH Max.
Weight:	11.5 kg
Dimensions (W×H×D):	424×89×450 mm

(Video Specifications)

Bandwidth: (Component)	
Y;	25 Hz~5.5 MHz +0.5/−3.0 dB
C;	25 Hz~2.0 MHz +0.5/−3.0 dB
S/N Ratio: (Component)	
Y;	Better than 47 dB
C;	Better than 48 dB
K Factor: (Component)	
Y 2T;	Less than 1.5%
C 5T;	Less than 2.0%
TBC Window Width:	32 H

(Video Input Signal)

CTCM:	12 pin multi-connector
Y;	1.0 Vp-p, 75Ω
C;	1.009 Vp-p, 75Ω (100% colour bar)
DOC Pulse:	12 pin multi-connector 0~−2 V, 75Ω, Negative Pulse
Ref. Video:	BNC×2 Loop-through with 75Ω, 1.0 Vp-p

(Video Output Signal)

Component Output 1:	12-pin multi-connector
Y;	1.0 V (Video 0.7, Sync 0.3)
R-Y;	0.7 V
B-Y;	0.7 V (100% Colour Bars)
Component Output 2:	BNC×3
Y;	1.0 V (Video 0.7, Sync 0.3)
R-Y;	0.7 V
B-Y;	0.7 V (100% Colour Bars)

(Processor Adjustment Range)

Video Output Level:	±2.5 dB
Chromal Level:	±2.5 dB
Set-Up:	−10~+15 IRE
Hue:	−15°
System H Phase:	±15 μsec.
System SC Phase:	More than 360°

(Standard Accessories)

- VTR Cable (1 pc)
- Component Cable (1 pc)
- Extension Board (1 pc)
- Power Cord (1 pc)
- Rack-mount Adaptors (2 pcs)
- Screws for Rack-mount Adaptors (8 pcs)
- Instruction Manual VQF1988

AU-750 PCM Studio VTR

(General Specifications)

Power Supply:	100~120/220~240 V AC, switchable with acceptable tolerance ±10%
Power Consumption:	360 W
Recording System:	4 rotary heads; 2-track helical scanning
Tape Speed:	66.295 mm/sec.
Tape:	½″ Metal Particle (MP) Tape
Recording Time:	97 minutes (with M90L)
Search Speed:	
Shuttle;	Still~±32×
Slow;	−1×~+2× with Auto Tracking
Jog;	with Auto Tracking
FF/REW Time:	Less than 3 minutes with M60L
Operating Temperature:	5°C~40°C (41°F~104°F)
Operating Humidity:	35%~85%
External Dimensions (W×H×D):	444×265×600 mm
Weight:	Approx. 45 kg

(Video Specifications)

Television Format:	625 lines, 50 fields
Modulation System:	
Y;	Frequency modulation
C;	Time compressed multiplexing (R-Y, B-Y)
Bandwidth: (Component)	
Y;	25 Hz~5.5 MHz +0.5/−3.0 dB
C;	25 Hz~2.0 MHz +0.5/−3.0 dB
S/N Ratio: (Component)	
Y;	Better than 47 dB
C;	Better than 48 dB
Y/C Delay:	Less than 20 ns
K Factor: (Component)	
Y 2T;	Less than 1.5%
C 5T;	Less than 2.0%
Linearity: (Component)	Less than 3.0%

(Audio Specifications)

Linear (CH1/CH2):	
Frequency Response;	50 Hz~15 kHz +1.0 dB, −2.0 dB 125 Hz~10 kHz ±1.0 dB
S/N Ratio;	Better than 58 dB at 3% distortion (Dolby NR off)
Distortion;	Less than 0.8% at 1 kHz standard input level
Erase;	Less than −70 dB
Wow and Flutter;	Less than 0.1% rms
Cross Talk;	Less than −55 dB (1 kHz)
FM (CH3/CH4):	
Frequency Response;	20 Hz~20 kHz +0.5 dB, −2.0 dB
Dynamic Range;	More than 80 dB
Distortion;	Less than 0.5% at 1 kHz standard input level
Wow and Flutter;	Less than 0.005% wrms
Cross Talk;	Less than −65 dB (1 kHz)
PCM (CH5/CH6)*:	
Dynamic Range;	More than 90 dB (Emphasis On)
Frequency Response;	20 Hz~20 kHz (+0.5 dB/−1.0 dB)
Total Harmonic Distortion;	Less than 0.05% (1 kHz standard level)
Wow and Flutter;	Unmeasurable

*when connected with AU-PC75 PCM processur.

(Video Input Signal)

COMPOSITE IN:	BNC×2 Loop through with 75Ω on/off SW 1.0 Vp-p ±0.3 Vp-p
REF VIDEO IN:	BNC×2 Loop through with 75Ω on/off SW 1.0 Vp-p ±0.3 Vp-p
COMPONENT/IN:	BNC×3, (switchable at front) 12P (MALE) Multiconnector,
Y;	1.0 Vp-p 75Ω
R-Y;	0.7 Vp-p 75Ω
B-Y;	0.7 Vp-p 75Ω
(Y/C Input Switchable):	
Y;	1.0 Vp-p
C;	0.885 Vp-p
CTCM IN:	12P (MALE) Multiconnector,
Y;	1.0 Vp-p 75Ω
C PR′, PB′;	0.7 V/0.7 Vp-p 75Ω (except SYNC)
Y DO Pulse;	NEG
C DO Pulse;	NEG (Condition: 100/0, 100/0 colour bars)
Input Return Loss:	Better than −40 dB

(Video Output Signal)

COMPOSITE OUT:	BNC×3
Video Out 1;	SYNC on/off
Video Out 2;	Composite Out
Video Out 3;	T/C Superimpose on/off Each has 75Ω 1.0 Vp-p ±0.05 Vp-p
COMPONENT OUT:	BNC×3 12P (FEMALE) Multiconnector
Y;	1.0 Vp-p 75Ω
B-Y;	0.7 Vp-p 75Ω
R-Y;	0.7 Vp-p 75Ω
BLACK BURST OUT:	BNC×1
SYNC; BURST;	0.3 Vp-p 75Ω
WFM OUT:	BNC×1 selectable for INPUT/YRF/CRF/Y, R-Y B-Y/C.DEM/Y.DEM Encoder Out Level is same as Component Out. RF Output level 0.5 Vp-p 75Ω
Output Return Loss:	Better than −34 dB (Condition: 100/0, 100/0 colour bars)

(Audio Input Signal)

AUDIO IN:	CH1/CH2 (Linear) XLR 3P×2 CH3/CH4 (FM) XLR 3P×2 CH5/CH6 (PCM) XLR 3P×2 (+4)/0/−20 dBu switchable 600Ω/15 kΩ balanced
TIME CODE IN:	XLR 3P×1 0.5 Vp-p–8 Vp-p high impedance balanced MIC/LINE (TC TRACK) −60/0 dBu

(Audio Output Signal)

AUDIO OUT:	CH1/CH2 (Linear) XLR 3P×4 CH3/CH4 (FM) XLR 3P×4 CH5/CH6 (PCM) XLR 3P×4 (+4)/0/−20 dBu switchable 50/15Ω balanced
TIME CODE OUT:	XLR×1 2.2 Vp-p low impedance
MONITOR OUT:	XLR 3P×3 (L/R/MIX) 0 dBu low impedance balanced
HEADPHONE OUT:	¼″ phone stereo jack −∞~−20 dBu (variable) 8Ω

(OTHERS)

EXT. NR:	16P Multiconnector
PCM :	31-pin Multiconnector

Specifications

AU-650B Studio VTR

(General Specifications)	
Power Supply:	100~120/220~240 V AC, switchable with acceptable tolerance ±10%
Power Consumption:	360 W
Recording System:	4 rotary heads; 2-track helical scanning
Tape Speed:	66.295 mm/sec.
Tape:	½″ Metal Particle (MP) Tape
Recording Time:	97 minutes (with M90L)
Search Speed:	
Shuttle;	Still~±32×
Slow;	−1×~+2× with Auto Tracking
Jog;	with Auto Tracking
FF/REW Time:	Less than 3 minutes with M60L
Operating Temperature:	5°C~40°C (41°F~104°F)
Operating Humidity:	35%~85%
External Dimensions (W×H×D):	444×265×600 mm
Weight:	Approx. 45 kg
(Video Specifications)	
Television Format:	625 lines, 50 fields
Modulation System:	
Y;	Frequency modulation
C;	Time compressed multiplexing (R-Y, B-Y)
Bandwidth: (Component)	
Y;	25 Hz~5.5 MHz +0.5/−3.0 dB
C;	25 Hz~2.0 MHz +0.5/−3.0 dB
S/N Ratio: (Component)	
Y;	Better than 47 dB
C;	Better than 48 dB
Y/C Delay:	Less than 20 ns
K Factor: (Component)	
Y 2T;	Less than 1.5%
C 5T;	Less than 2.0%
Linearity: (Component)	Less than 3.0%
(Audio Specifications)	
Linear (CH1/CH2):	
Frequency Response;	50 Hz~15 kHz +1.0 dB, −2.0 dB 125 Hz~10 kHz ±1.0 dB
S/N Ratio;	Better than 58 dB at 3% distortion (Dolby NR off)
Distortion;	Less than 0.8% at 1 kHz standard input level
Erase;	Less than −70 dB
Wow and Flutter;	Less than 0.1% rms
Cross Talk;	Less than −55 dB (1 kHz)
FM (CH3/CH4):	
Frequency Response;	20 Hz~20 kHz +0.5 dB, −2.0 dB
Dynamic Range;	More than 80 dB
Distortion;	Less than 0.5% at 1 kHz standard input level
Wow and Flutter;	Less than 0.005% wrms
Cross Talk;	Less than −65 dB (1 kHz)
(Video Input Signal)	
COMPOSITE IN:	BNC×2 Loop through with 75Ω on/off SW 1.0 Vp-p ±0.3 Vp-p
REF VIDEO IN:	BNC×2 Loop through with 75Ω on/off SW 1.0 Vp-p ±0.3 Vp-p
COMPONENT/IN:	BNC×3, (switchable at front) 12P (MALE) Multiconnector,
Y;	1.0 Vp-p 75Ω
B-Y;	0.7 Vp-p 75Ω
R-Y;	0.7 Vp-p 75Ω

(Y/C Input Switchable)	
Y;	1.0 Vp-p
C;	0.885 Vp-p
CTCM IN:	12P (MALE) Multiconnector,
Y;	1.0 Vp-p 75Ω
C P_R', P_B';	0.7 V/0.7 Vp-p 75Ω (except SYNC)
Y DO Pulse;	NEG
C DO Pulse;	NEG (Condition: 100/0, 100/0 colour bars)
Input Return Loss:	Better than −40 dB
(Video Output Signal)	
COMPOSITE OUT:	BNC×3
Video Out 1;	SYNC on/off
Video Out 2;	Composite Out
Video Out 3;	T/C Superimpose on/off Each has 75Ω 1.0 Vp-p ±0.05 Vp-p
COMPONENT OUT:	BNC×3 12P (FEMALE) Multiconnector
Y;	1.0 Vp-p 75Ω
B-Y;	0.7 Vp-p 75Ω
R-Y;	0.7 Vp-p 75Ω
BLACK BURST OUT:	BNC×1
SYNC; BURST;	0.3 Vp-p 75Ω
WFM OUT:	BNC×1 selectable for INPUT/YRF/CRF/Y, R-Y, B-Y/C.DEM/Y.DEM Encoder Out Level is same as Component Out. RF Output level 0.5 Vp-p 75Ω
Output Return Loss:	Better than −34 dB (Condition: 100/0, 100/0 colour bar)
(Audio Input Signal)	
AUDIO IN:	CH1/CH2 (Linear) XLR 3P×2 CH3/CH4 (FM) XLR 3P×2 (+4)/0/−20 dBu switchable 600Ω/15 kΩ balanced
TIME CODE IN:	XLR×1 0.5 Vp-p~8 Vp-p high impedance balanced MIC/CUE IN (TC TRACK) −60/0.4 dBu
(Audio Output Signal)	
AUDIO OUT:	CH1/CH2 (Linear) XLR 3P×4 CH3/CH4 (FM)XLR 3P×4 (+4)/0/−20 dBu switchable 50/15Ω balanced
TIME CODE OUT:	XLR×1 2.2 Vp-p low impedance
MONITOR OUT:	XLR 3P×3 (L/R/MIX) 0 dBu balanced variable level control
HEADPHONE OUT:	¼″ phone stereo jack −∞~−20 dBu (variable) 8Ω
(OTHERS)	
EXT. NR:	16P Multiconnector
Remote 1:	50-pin female (D-SUB)
Remote 2 IN:	9-pin female (D-SUB)
Remote 2 OUT:	9-pin female (D-SUB)
ENCODER Remote:	15-pin female (D-SUB)
WFM Remote:	25-pin female (D-SUB)

AU-640 Studio VTR

(General Specifications)

Power Supply:	110~120/220~240 V AC, switchable with acceptable tolerance ±10%
Power Consumption:	Approx. 350 W
Recording System:	4 rotary heads; 2-track helical scanning
Tape Speed:	66.295 mm/sec.
Tape:	½″ Metal Particle (MP) Tape
Recording Time:	97 minutes (with M90L)
Search Speed:	
Shuttle;	Still~±32×
Slow;	−1×~+2× with Jog
FF/REW Time:	Less than 3 minutes with M60L
Operating Temperature:	5°C~40°C (41°F~104°F)
Operating Humidity:	35%~85%
Dimensions (W×H×D):	444×265×600 mm
Weight:	Approx. 45 kg

(Video Specifications)

Television Format:	625 lines, 50 fields
Modulation System:	
Y;	Frequency modulation
C;	Time compressed multiplexing (R-Y, B-Y)
Bandwidth: (Component)	
Y;	25 Hz~5.5 MHz, +0.5/−3.0 dB
C;	25 Hz~2.0 MHz, +0.5/−3.0 dB
S/N Ratio: (Component)	
Y;	Better than 47 dB
C;	Better than 48 dB
Y/C Delay:	Less than 20 ns
K Factor: (Component)	
Y 2T;	Less than 1.5%
C 5T;	Less than 2.0%
Linearity: (Component)	Less than 3.0%

(Audio Specifications)

Linear (CH1/CH2):	
Frequency Response;	50 Hz~15 kHz, +1.0 dB/−2.0 dB 125 Hz~10 kHz, ±1.0 dB
S/N Ratio;	Better than 58 dB at 3% distortion (Dolby NR off)
Distortion;	Less than 1% at 1 kHz standard input level
Erase;	Less than −70 dB
Wow and Flutter;	Less than 0.1% rms
Cross Talk;	Less than −55 dB (1 kHz)
FM (CH3/CH4):	
Frequency Response;	20 Hz~20 kHz, +0.5 dB/−2.0 dB
Dynamic Range;	More than 80 dB
Distortion;	Less than 0.5% at 1 kHz standard input level
Wow and Flutter;	Less than 0.005% wrms
Cross Talk;	Less than −65 dB (1 kHz)

(Video Input Signal)

COMPOSITE IN:	BNC×2 Loop through with 75Ω on/off SW 1.0 Vp-p ±0.3 Vp-p
REF VIDEO IN:	BNC×2 Loop through with 75Ω on/off SW 1.0 Vp-p ±0.3 Vp-p
COMPONENT/IN:	BNC×3 (switchable at front) 12P (MALE) Multiconnector,
Y;	1.0 Vp-p 75Ω
B-Y;	0.7 Vp-p 75Ω
R-Y;	0.7 Vp-p 75Ω
(Y/C Input Switchable)	
Y;	1.0 Vp-p
C;	0.885 Vp-p
CTCM IN;	12P (MALE) Multiconnector,
Y;	1.0 Vp-p 75Ω
C PR′, PB′;	0.7 V/0.7 Vp-p 75Ω (except SYNC)
Y DO Pulse;	NEG
C DO Pulse;	NEG (Condition: 100/0.100/0 colour bars)
Input Return Loss:	Better than −40 dB

(Video Output Signal)

COMPOSITE OUT:	BNC×3
Video Out 1;	SYNC on/off
Video Out 2;	Composite Out
Video Out 3;	T/C Superimpose on/off Each has 75Ω 1.0 Vp-p ±0.05 Vp-p
COMPONENT OUT:	BNC×3 12P (FEMALE) Multiconnector
Y;	1.0 Vp-p 75Ω
B-Y;	0.7 Vp-p 75Ω
R-Y;	0.7 Vp-p 75Ω
BLACK BURST OUT:	BNC×1
SYNC;	0.3 Vp-p 75Ω
Burst;	0.3 Vp-p 75Ω
WFM OUT:	BNC×1 selectable for INPUT/YRF/CRF/Y, R-Y, B-Y/C.DEM/Y.DEM Encoder Out Level is same as Component Out. RF Output level 0.5 Vp-p 75Ω
Output Return Loss:	Better than −34 dB (Condition: 100/0.100/0 colour bar)

(Audio Input Signal)

AUDIO IN:	CH1/CH2 (Linear) XLR 3P×2 (+4)/0/−20 dBu switchable 600Ω/15 kΩ balanced CH3/CH4 (FM) XLR 3P×2 (+4)/0/−20 dBu switchable 600Ω/15 kΩ balanced
TIME CODE IN:	XLR×1 0.5 Vp-p~8 Vp-p high impedance balanced MIC/LINE (TC TRACK) −60/0 dBu

(Audio Output Signal)

AUDIO OUT:	XLR 3P×4 CH1/CH2 (Linear) CH3/CH4 (FM) (+8)/0/−20 dBu switchalbe 50/15Ω balanced
TIME CODE OUT:	XLR×1 2.2 Vp-p low impedance
MONITOR OUT:	XLR 3P×3 (L/R/MIX) 0 dBu balanced variable level control
HEADPHONE OUT:	¼″ phone stereo jack −∞~−20 dBu (variable) 8Ω

(OTHERS)

EXT. NR:	16P Multiconnector
Remote 1:	50-pin female (D-SUB)
Remote 2 IN:	9-pin female (D-SUB)
Remote 2 OUT:	9-pin female (D-SUB)
ENCODER Remote:	15-pin female (D-SUB)
WFM Remote:	25-pin female (D-SUB)

Specifications

AU-630 Studio player

(General Specifications)

Power Supply:	110~120/220~240 V AC, switchable with acceptable tolerance ±10%
Power Consumption:	Approx. 230 W
Recording System:	4 rotary heads; 2-track helical scanning
Tape Speed:	66.295 mm/sec.
Tape:	½″ Metal Particle (MP) Tape
Playback Time:	97 minutes (with M90L)
Search Speed:	
Shuttle;	Still~±32× with Auto Tracking
Jog;	−1×~+2× with Auto Tracking
FF/REW Time:	Less than 3 minutes with M60L
Operating Temperature:	5°C~40°C (41°F~104°F)
Operating Humidity:	35%~85% (Noncondensing)
Dimensions (W×H×D):	444×265×600 mm
Weight:	Approx. 45 kg

(Video Specifications)

Television Format:	625 lines, 50 fields
Modulation System:	
Y;	Frequency modulation
C;	Time compressed multiplexing (R-Y, B-Y)
Bandwidth: (Component)	
Y;	25 Hz~5.5 MHz +0.5/−3.0 dB
C;	25 Hz~2.0 MHz +0.5/−3.0 dB
S/N Ratio: (Component)	
Y;	Better than 47 dB
C;	Better than 48 dB
Y/C Delay:	20 ns
K Factor: (Component)	
Y 2T;	Less than 1.5%
C 5T;	Less than 2.0%
Linearity: (Component)	Less than 3.0%

(Audio Specifications)

Linear (CH1/CH2):	
Frequency Response;	50 Hz~15 kHz +1.0 dB, −2.0 dB 125 Hz~100 kHz ±1.0 dB
S/N Ratio;	Better than 58 dB at 3% distortion (Dolby NR off)
Distortion;	Less than 0.8% at 1 kHz standard input level
Erase;	Less than −70 dB
Wow and Flutter;	Less than 0.1% rms
Cross Talk;	Less than −55 dB (1 kHz)
FM (CH3/CH4):	
Frequency Response;	20 Hz~20 kHz +0.5 dB, −2.0 dB
Dynamic Range;	More than 80 dB
Distortion;	Less than 0.6% at 1 kHz standard input level
Wow and Flutter;	Less than 0.005% wrms
Cross Talk;	Less than −65 dB (1 kHz)

(Video Input Signal)

REF VIDEO IN:	BNC×2 Loop through with 75Ω on/off SW 1.0 Vp-p ±0.3 Vp-p

(Video Output Signal)

VIDEO OUT:	BNC×3
Video Out 1;	SYNC on/off
Video Out 2;	Composite Out
Video Out 3;	T/C Superimpose on/off
	Each has 75Ω 1.0 Vp-p ±0.05 Vp-p
COMPONENT 1 OUT:	12P Multiconnector
Y;	1.0 Vp-p 75Ω
B-Y;	0.7 Vp-p 75Ω
R-Y;	0.7 Vp-p 75Ω
COMPONENT 2 OUT:	BNC×3
Y;	1.0 Vp-p 75Ω
B-Y;	0.7 Vp-p 75Ω
R-Y;	0.7 Vp-p 75Ω
BLACK BURST OUT:	BNC×1
SYNC;	0.3 Vp-p 75Ω
Burst;	0.3 Vp-p 75Ω
WFM OUT:	BNC×1 selectable for YRF/CRF/Y/R-Y/B-Y DEM/C.DEM/Encoder Out Level is same as Component Out
RF Output level;	0.5 Vp-p 75Ω

(Audio Output Signal)

AUDIO OUT:	XLR 3P×4 CH1/CH2 (Linear) CH3/CH4 (FM) (+4)/0/−20 dBu switchable 50/15Ω balanced
TIME CODE OUT:	XLR×1 2.2 Vp-p low impedance
MONITOR OUT:	XLR 3P×3 (L/R/MIX) 0 dBu balanced variable level control
HEADPHONE OUT:	¼″ phone stereo jack −∞~−20 dBu (variable) 8Ω
EXT. NR:	16P Multiconnector

AU-620 Studio player

(General Specifications)

Power Supply:	100~120/220~240 V AC, switchable with acceptable tolerance ±10%
Power Consumption:	Approx. 230 W
Recording System:	4 rotary heads; 2-track helical scanning
Tape Speed:	66.295 mm/sec.
Tape:	½″ Metal Particle (MP) Tape
Recording Time:	97 minutes (with M90L)
Search Speed:	
Shuttle;	Still~±32×
Slow;	−1×~+2× with Jog
FF/REW Time:	Less than 3 minutes with M60L
Operating Temperature:	5°C~40°C (41°F~104°F)
Operating Humidity:	35%~85% (Noncondensing)
External Dimensions (W×H×D):	444×265×600 mm
Weight:	Approx. 45 kg

(Video Specifications)

Television Format:	625 lines, 50 fields
Modulation System:	
Y;	Frequency modulation
C;	Time compressed multiplexing (R-Y, B-Y)
Bandwidth: (Component)	
Y;	25 Hz~5.5 MHz +0.5/−3.0 dB
C;	25 Hz~2.0 MHz +0.5/−3.0 dB
S/N Ratio: (Component)	
Y;	Better than 47 dB
C;	Better than 48 dB
Y/C Delay:	20 ns
K Factor: (Component)	
Y 2T;	Less than 1.5%
C 5T;	Less than 2.0%
Linearity: (Component)	Less than 3.0%

(Audio Specifications)

Linear (CH1/CH2):	
Frequency Response;	50 Hz~15 kHz +1.0 dB, −2.0 dB 125 Hz~10 kHz ±1.0 dB
S/N Ratio;	Better than 58 dB at 3% distortion (Dolby NR off)
Distortion;	Less than 0.8% at 1 kHz standard input level
Wow and Flutter;	Less than 0.1% rms
Cross Talk;	Less than −55 dB (1 kHz)
FM (CH3/CH4):	
Frequency Response;	20 Hz~20 kHz +0.5 dB, −2.0 dB
Dynamic Range;	More than 80 dB
Distortion;	Less than 0.6% at 1 kHz standard input level
Wow and Flutter;	Less than 0.005% wrms
Cross Talk;	Less than −65 dB (1 kHz)

(Video Input Signal)

REF VIDEO IN:	BNC×2 Loop through with 75Ω on/off SW 1.0 Vp-p ±0.3 Vp-p

(Video Output Signal)

COMPOSITE OUT:	BNC×3
Video Out 1:	SYNC on/off
Video Out 2;	Composite Out
Video Out 3;	T/C Superimpose on/off Each has 75Ω 1.0 Vp-p ±0.05 Vp-p
COMPONENT OUT:	BNC×3 12P (FEMALE) Multiconnector
Y;	1.0 Vp-p 75Ω
B-Y;	0.7 Vp-p 75Ω
R-Y;	0.7 Vp-p 75Ω
BLACK BURST OUT:	BNC×1
SYNC; BURST;	0.3 Vp-p 75Ω
WFM OUT:	BNC×1 selectable for INPUT/YRF/CRF/Y, R-Y B-Y/C.DEM/Y.DEM Encoder Out Level is same as Component Out. RF Output level 0.5 Vp-p 75Ω
Output Return Loss:	Better than −34 dB (Condition: 100/0, 100/0 colour bar)

(Audio Output Signal)

AUDIO OUT:	XLR 3P×4 CH1/CH2 (Linear) (+4)/0/−20 dBu switchable 50/15Ω balanced CH3/CH4 (FM) (+4)/0/−20 dBu switchable 50/15Ω balanced
TIME CODE OUT:	XLR×1 2.2 Vp-p low impedance
MONITOR OUT:	XLR 3P×3 (L/R/MIX) 0 dBu balanced variable level control
HEADPHONE OUT:	¼″ phone stereo jack −∞~−20 dBu (variable) 8Ω
EXT. NR:	16P Multiconnector

(OTHERS)

Remote 1:	50-pin female (D-SUB)
Remote 2 IN:	9-pin female (D-SUB)
Remote 2 OUT:	9-pin female (D-SUB)
ENCODER Remote:	15-pin female (D-SUB)
WFM Remote:	25-pin female (D-SUB)

Specifications

AU-PC75 PCM Processor

(General Specifications)

Power Supply:	100~120/220~240 V AC
Power Consumption:	75 W
Dimensions (W×H×D):	436×90×590 mm
Weight:	Approx. 15 kg
Sampling Rate:	48 kHz
Quantization:	16-bit linear
Emphasis:	on/off
Error Correction:	Double encoded Reed-Solomon codes
Digital I/O	AES/EBU Standard

(Audio Input Signal)

AUDIO IN:	
CH5/CH6;	XLR 3P×2 (+8)/0/−20 dBu switchable 600Ω/15 kΩ balanced
DIGITAL IN;	XLR 3P×1

(Audio Output Signal)

AUDIO OUT:	
CH5/CH6;	XLR 3P×2 (+8)/0/−20 dBu switchable 50/15Ω balanced
THROUGH:	XLR 3P×1
TIME CODE OUT:	XLR 3P×1 2.5 Vp-p low impedance
PCM IN/OUT:	31P×1

AU-A65 Editing Controller

(General Specifications)

Power Supply:	100~120/220~240 V AC, DC 50/60 Hz
Power Consumption:	40 W
Operating Temperature;	0°C~40°C (32°F~104°F)
Operating Humidity:	35%~80%
Dimensions (W×H×D):	430×158×550 mm
Weight:	18 kg

(Editing System)

Computer:	Micro computer
Memory Capacity:	250 edits
Control:	PLAY, STOP, REW, FF, STB OFF, EJECT, PLAY +/−, STILL, JOG, VAR, SHTL
Editing Control:	VVV, OUT-VVV, BVB, OUT-BVB, VBV, OUT-VBV, REV, OUT-REV, AUTO EDIT, 1ST EDIT, PROG EDIT, GO TO, PREROLL, TAKE, ALL STOP, EDIT STOP
Editing Mode:	ASM (Assemble), INS/V/A1/A2 (Insert), NOR (Normal), A/B (A/B rolls) and M-MEM (Motion-memory)

(Counter Display)

Edit Display:	EVENT No., REEL No., WIPE, TRANSITION MAX 999 frames
Displays for P-R-VTR:	Edit point, MAX. ±9 hr. 59 min. 59 sec. 29 fr.

(Connectors)

SYNC. IN/OUT:	BNC×2 Loop-through with 75Ω
VTR/AV SWITCHER:	9P×1
SPARE:	9P×1
GPI OUT:	15P×1, Relay contact (TTL Output)×3, able to set the pulse length and output timing
HOST CPU:	25P×1, RS-232C, able to set the Parity, Baud Rate and Stop Bit
PRINTER:	36P×1

(Others)

Data Transmissions System:	TTL, Parallel, RS-422A, RS-232C
Connectable VTR:	AU-750, AU-650B, AU-640, AU-630, AU-620, AU-500, AG-7500, AG-7510
Connectable Switcher:	AU-SW65
No. of Connectable VTRs:	Up to 4 VTRs (1 R-VTR and 3P-VTRs)
Edit Reference Signal:	CTL (Control Signal), LTC (SMPTE Time Code)
Editing Precision:	±0 Frames (When Time Code)
Preroll Time:	3, 5, 7, 10 sec. (selectable)

AU-ER65 Encoder Remote Control Unit

(General Specifications)

Dimensions (W×H×D):	424×43.5×400 mm (without rubber feet)
Weight:	4 kg

(Standard Accessories)
- Remote Control Cables (1 pc)
- Rack-mount Adaptors (2 pcs)
- Screws for Rack-mount Adaptor (4 pcs)
- Display Sheet (1 pc)

AU-WR65 Waveform Remote Control Unit

(General Specifications)

Power Supply:	100~120/220~240 V, AC 50/60 Hz
Power Consumption:	11 W
Operating Temperature:	0°C~40°C (32°F~104°F)
Operating Humidity:	35%~80%
Weight:	6.7 kg
Dimensions (W×H×D):	424×88×400 mm

(Video)

Bandwidth:	60 Hz~8 MHz ±0.5 dB
S/N Ratio:	60 dBp-p/rms
DG:	Less than 0.5%
DP:	Less than 0.5°
Crosstalk:	−56 dBp-p/rms

(Video)

Input:	
VIDEO IN:	BNC×4, 1.0 Vp-p 75Ω unbalanced
Output:	
VIDEO OUT:	BNC×1, 1.0 Vp-p 75Ω unbalanced

(Standard Accessories)
- Waveform Remote Control Cables (4 pcs)
- Power Cord (1 pc)
- Screws for Rack-Mounting Adaptor (8 pcs)

AU-SW65 Audio Video Switcher

(General Specifications)

Power Supply:	100~240 V, AC 50/60 Hz
Power Consumption:	25 W
Operating Temperature:	0°C~40°C (32°F~104°F)
Operating Humidity:	35%~80%
Weight:	10 kg
Dimensions (W×H×D):	424×88×400 mm

(Video Input)

Component (×4):	
Y;	1.0 Vp-p, 75Ω, 12 pin connector
C;	0.7 Vp-p, 75Ω, 12 pin connector
Composite (×4):	1.0 Vp-p, 75Ω, BNC connector

(Video Output)

Component (×1):	
Y;	1.0 Vp-p, 75Ω, 12 pin connector
C;	0.7 Vp-p, 75Ω, 12 pin connector
Composite (×2, split):	1.0 Vp-p, 75Ω, BNC connector
Frequency Response:	1 MHz~8 MHz, ±1 dB
Signal-to-Noise Ratio:	More than 60 dBp-p/rms
DG:	Less than 1%
DP:	Less than 1°
Sag:	Within 1% both horizontally and vertically
Crosstalk:	Less than −80 dBp-p/rms (at 3.58 MHz)

(Audio)

Input (×4):	+4 dBu, 600Ω balanced, 3 pin XLR connector
Output (×1, split):	+4 dBu, 600Ω balanced, 3 pin XLR connector
Frequency Response:	20 Hz~20 kHz, ±0.5 dB
Signal-to-Noise Ratio:	Better than 80 dB
Crosstalk:	More than −80 dB (at 1 kHz)

(Standard Accessories Supplied)
- Power Cord (1 pc)
- 9P Cable (ca. 16.5 feet) (1 pc)
- Rack Mount Adaptors (2 pcs)
- Screws for Rack Mount Adaptors (4 pcs)
- Extension Board (1 pc)

Specifications

AU-A15 Parallel Remote Controller

(General Specifications)

Power Supply:	12 V DC (supplied from VTR)
Power Consumption:	2 W
Operating Temperature:	41°F~104°F (5°C~40°C)
Operating Humidity:	35%~80%
Dimensions (W×H×D):	18⅞″×1¾″×3¹⁵⁄₁₆″ (480×43.5×100 mm)
Weight:	1.5 kg
Connector:	37 P D-sub

AU-A650B Remote Control Panel Case

(General Specifications)

Power Supply:	100~240 V AC, 50~60 Hz
Power Consumption:	22 W
Operating Temperature:	0°C~40°C (32°F~104°F)
Operating Humidity:	35%~80%
Weight:	4.2 kg
Dimensions (W×H×D):	480×96×266 mm

(Accessories)

•Standard Accessories:	AC Cable Blank Panel
•Optional Accessories:	Serial Remote Control Cable AU-C5 5 m AU-C10 10 m AU-C30 30 m

AU-A640 Remote Control Panel Case

(General Specifications)

Power Supply:	100~240 V AC, 50~60 Hz
Power Consumption:	14 W
Operating Temperature:	0°C~40°C (32°F~104°F)
Operating Humidity:	Less than 85%
Weight:	3.7 kg
Dimensions (W×H×D):	480×89×265 mm

(Standard Accessories)

- AC Cable
- D Sub 15-pin Male Connector 2 pcs.

AU-A630 Remote Control Panel Case

Weight:	3.5 kg
Dimensions (W×H×D):	480×89×265 mm

(Standard Accessories)

- Remote Control Cable (6.4 feet/2 m)
- Cable Clamp (1 pc)

AU-A620 Remote Control Panel Case

Weight:	1.6 kg
Dimensions (W×H×D):	430×68×134 mm

(Standard Accessories)

- Remote Control Cable 2 m
- Cable Clamp (1 pc)
- Screws Zeach, Long and Short (2 pcs each)

System Parameters

ITEM	M.A.R.C.II			
TYPE	100	400	800	1200
Structure	Basic	Module Expansion		
Cassette	123	472	824	1176
Type of Cassette	Standard and Small			
I/O Station Cassette No.	16			
System VTR	Standard/M-II VTR or player			
VTR	5	—		
Playback Time	Up to 90 minutes per cassette			
Minimum event time for continuous playback	10 sec	15 sec		
Preroll	Selectable			
Time Code	EBU/SMPTE System			
Bar Code	Three of Nine Type; 8 characters			
Interface	Compaq 386–20 Model 60			
Video	System Outputs: Program A, Program B, Monitor, Test			
Audio – Input/Output Channel	4 Channels (2 Channels Optional)			
Weight – VTR	215 kg			
Weight – TAPE	37 kg	143 kg	248 kg	354 kg
Weight – ROBOT	1025 kg	1610 kg	2090 kg	2570 kg
Weight – Total	1277 kg	1967 kg	2553 kg	3139 kg
Dimensions (W×H×D)	1370×2000×1150 mm	2195×2000×1150 mm	3020×2000×1150 mm	3845×2000×1150 mm
Power Consumption	3.0 K VA	4.5 K VA	5.0 K VA	5.5 K VA
Power Source	120/208 3 phase 4 wire or 110/220 1 phase 3 wire			

Specifications

WV-F200A 3-CCD Colour Video Camera

Power Source:	12 V DC 5 ways
Power Consumption:	Head with Gen Lock adaptor 10.8 W (12 V DC, 0.9 A) ENG Configuration 13.2 W (12 V DC, 1.1 A)
Scanning:	625 lines, 2:1 interlace, 25 frames/sec.
Pick-up System:	Interline-transfer CCD, 3-chip
Pick-up Element:	500 (H) × 582 (V)
Scan Size:	Equivalent to a 2/3″ pick-up tube
Video Output Level:	1.0 Vp-p PAL composite 75Ω × 1 (BNC-type) 1.0 Vp-p PAL composite 75Ω × 1 (32-pin) 1.0 Vp-p PAL composite/1.0 Vp-p Y signal (SYNC 0.3 Vp-p) (32-pin) 0.3 Vp-p chroma signal with burst (32-pin)
Horizontal Resolution:	620 lines (typical)
Signal-to-Noise Ratio:	57 dB (typical)
Illumination Required:	2,000 Lux (with F5.6 at 3,200°K)
Required Minimum Illumination:	30 Lux (with F1.7 +18 dB)
Audio Output:	−20 dBm/−60 dBm (32-pin)
Lens Mounting:	Bayonet mount (2/3 inch lens)
Viewfinder:	Brightness, Contrast
White Balance:	3,200°K (with preset) AWC A (with memory) AWC B (with memory)
Operational Ambient Temperature:	5°C~45°C
Operational Ambient Humidity:	30%~90%
Dimensions (W×H×D):	Camera head 173×257×330 mm ENG configuration 249×257×494 mm
Weight:	Camera head 3.5 kg ENG configuration 5.4 kg

WV-F70 2-CCD Colour Video Camera

Power Source:	12 V DC 5 ways
Power Consumption:	12 V DC 1 A (ENG Configuration) 12 V DC 1.7 A (Studio)
Pick-up System:	Interline transfer CCD, 2-Chip
Picture Elements:	600 (H) × 582 (V)
Scan Size:	Equivalent to a 1/2″ pick-up tube
Lens Mount:	Screw Mount
Electronic Shutter:	1/250, 1/500, 1/1,000 second
Sync System	Internal of External (via Camera Adaptor) with the BS or VBS signal
Horizontal Resolution:	500 lines (typical)
Sensitivity:	2,000 Lux, f4.0, 3,200°K (−6 dB on)
Minimum Illumination:	30 Lux, f1.6 (+18 dB on)
Signal-to-Noise Ratio:	55 dB (−6 dB on, typical)
Gain Selection:	−6 dB, 0 dB, +3 dB, +9 dB, +12 dB, +18 dB
White Balance:	3,200°K (with Preset) AWC A (with memory) AWC B (with memory)
Black Balance:	Automatic with Each Gain Position
Colour Bar:	Built-in EBU Colour Bar
Vertical Aperture Correction:	2 Line Enhancer
Electronic Viewfinder:	1.5″ with Quick Start CRT
Weight:	Approx. 3.0 kg (Head + Adaptor)

AG-7450 S-VHS Portable Video Recorder

(General)	
Power Source:	12 V DC
Power Consumption:	Approx. 35 W with Camera
Operating Temperature:	0°C~40°C
Operating Humidity:	35%~80%
Dimensions (W×H×D):	230×213×117 mm
Weight:	Approx. 3.4 kg
(System)	
Television System:	625 lines, 50 fields (PAL)
Video Recording:	2 rotary heads, helical scanning system
Luminance;	FM azimuth recording
Chrominance;	converted subcarrier phase shift recording
Audio Channel:	4 channels
NORMAL (CH1/CH2);	2 fixed heads
Hi-Fi (CH1/CH2);	2 rotary heads
(Tape Transport)	
Tape Speed:	23.39 mm/sec.
Tape Format:	VHS/S-VHS Tape
Record/Playback Time:	180 min. with NV-SE180EM
(Video)	
Horizontal Resolution: (on monoscope test pattern)	
monochrome;	more than 400 lines (S-VHS) more than 250 lines (VHS)
colour;	more than 400 lines (S-VHS) more than 250 lines (VHS)
monochrome;	45 dB (VHS) (with TRAP ON)
colour;	45 dB (VHS) (with TRAP ON)
(Audio)	
Frequency Response:	
NORMAL;	50 Hz~10 kHz
Hi-Fi;	20 Hz~20 kHz
Signal-to-Noise Ratio: (Rohde & Schwartz noise meter)	
NORMAL;	50 dB (with Dolby* NR ON)
Dynamic Range:	
Hi-Fi;	80 dB
(Input level)	
Multi connector (68P);	1.0 Vp-p, 1 kΩ unbalanced
Audio In (XLR);	−6 dBs 600Ω balanced
MIC In (XLR);	−60 dBs 600Ω balanced
(Output level)	
Earphone (Mini jack);	−50~−20 dB (Variable), 8Ω unbalanced
Audio Monitor (PHONE);	−8 dBs, 800Ω unbalanced
Video Out (BNC);	1.0 Vp-p, 75Ω unbalanced

AG-S745 VTR Adaptor

Power Supply:	12 V DC
Power Consumption:	Max. 3 W (35 W with Camera)
Operating Temperature:	0°C~40°C
Operating Humidity:	35%~80%
Dimensions (W×H×D):	106×210×89 mm
Weight:	Approx. 750 g
Television System:	625 lines, 50 fields (PAL)
Interface (68 P):	
Camera (14P):	
Video IN (BNC):	1.0 Vp-p, 75Ω
S-Video In (4P) Y;	1.0 Vp-p, 75Ω
C;	0.3 Vp-p burst level 75Ω
S-Video Out (4P) Y;	1.0 Vp-p, 75Ω
C;	0.3 Vp-p burst level 75Ω
Audio Out (XLR):	*−6/−20 dBs, low impedance,* balanced

AG-F745 Time Code Generator/Reader

Power Supply:	5 V DC
Power Consumption:	0.5 W
Operating Temperature:	0°C~40°C
Dimensions (W×H×D):	65×94×39 mm
Weight:	Approx. 140 g
Input Signal:	Frame pulse start/stop signal
Output Signal:	EBU standard time code signal
Display:	h, min, sec, frame, 8 digits
Time Set:	h, min, sec, frame, 8 digits
User Bits Set:	8 digits
Time Code Synchronization Position:	Synchronization to the frame pulse rising edge

Specifications

AG-7500 S-VHS Editing Video Cassette Recorder

(General)	
Power Source:	110/120/220/240 V AC 50~60 Hz
Power Consumption:	100 W with AG-A750
Operating Temperature:	5°C~40°C
Operating Humidity:	35%~80%
Dimensions (W×H×D):	430×176×453 mm
Weight:	Approx. 21 kg
(System)	
Television System:	625 lines, 50 fields (PAL)
Video Recording:	2 rotary heads, helical scanning system
Audio Channel:	4 channels
NORMAL (CH1/CH2);	2 fixed heads
Hi-Fi (CH1/CH2);	2 rotary heads
(Tape Transport)	
Tape Speed:	23.39 mm/sec.
Tape Format:	VHS/S-VHS Tape
(Video)	
Horizontal Resolution: (On monoscope test pattern)	
monochrome;	more than 400 lines (S-VHS) more than 300 lines (VHS)
colour;	more than 400 lines (S-VHS) more than 240 lines (VHS)
Signal-to-Noise Ratio: (Rohde & Schwartz noise meter)	
monochrome;	45 dB (VHS)
colour;	45 dB (VHS) (with TRAP ON)
(Audio)	
Frequency Response:	
NORMAL;	50–12 kHz
Hi-Fi;	20–20 kHz
Signal-to-Noise Ratio:	
NORMAL;	50 dB (with Dolby* NR ON)
Dynamic Range:	
Hi-Fi;	90 dB
(Input level)	
Video Input:	
Video In (BNC);	1.0 Vp-p, 75Ω unbalanced
Dub In (7P) Y;	1.0 Vp-p, 75 Ω unbalanced
S-Video In (4P) Y;	1.0 Vp-p, 75Ω unbalanced
Audio Input:	
Audio In (XLR);	Hi-Fi, CH1/CH2 +4/0/−6 dBs 600Ω balanced NORMAL, CH1/CH2 +4/0/−6 dBs 600Ω balanced
MIC In;	CH1/CH2 −60 dBv, 4.7 kΩ unbalanced
Time Code Input:	
Time Code In (PHONO);	1.0 Vp-p, 10 kΩ unbalanced
Ext Sync In (BNC);	4.0 Vp-p, negative pulse, 75Ω unbalanced
(Output level)	
Video Output:	
Video Out (BNC);	1.0 Vp-p, 75Ω unbalanced
Dub Out (7P) Y;	1.0 Vp-p, 1 kΩ unbalanced
S-Video Out (4P) Y;	1.0 Vp-p, 75Ω unbalanced
Audio Output:	
Audio Out (XLR);	Hi-Fi, CH1/CH2 +4/0/−6 dBs 50Ω balanced NORMAL, CH1/CH2 +4/0/−6 dBs 50Ω balanced
Audio Monitor (phono);	0 dBv, 600Ω unbalanced
Headphones jack (¼″ PHONO);	−60~−20 dBv, 8Ω unbalanced
Time Code Output:	
Time Code Out (phono);	2.4 Vp-p, low impedance unbalanced
DOC Out (BNC);	0.5 Vp-p, 75Ω unbalanced

AG-7510 S-VHS Video Cassette Player

(General)	
Power Source:	110/120/220/240 V (selectable) AC 50–60 Hz
Power Consumption:	60 W with AG-A750
Operating Temperature:	5°C~40°C
Operating Humidity:	35%~80%
Dimensions (W×H×D):	430×176×453 mm
Weight:	Approx. 19.3 kg
(System)	
Television System:	625 lines, 50 fields (PAL)
Video Recording:	2 rotary heads, helical scanning system
Luminance;	FM azimuth recording
Chrominance;	converted subcarrier phase shift recording
Audio Channel:	4 channels
NORMAL (CH1/CH2);	2 fixed heads
Hi-Fi (CH1/CH2);	2 rotary heads
(Tape Transport)	
Tape Speed:	23.39 mm/sec
Tape Format:	VHS/S-VHS tape
Playback Time:	180 min, with NV-SE180E
FF/REW Time:	Approx. 3 min with NV-SE180E
(Video)	
Horizontal Resolution: (on monoscope test pattern)	
monochrome;	more than 400 lines (S-VHS) more than 300 lines (VHS)
colour;	more than 400 lines (S-VHS) more than 240 lines (VHS)
Signal-to-Noise Ratio: (Rohde & Schwartz noise meter)	
monochrome;	45 dB (VHS)
colour;	45 dB (VHS) (with TRAP ON)
(Audio)	
Frequency Response:	
Hi-Fi;	20–20 kHz
NORMAL;	50–12 kHz
Signal-to-Noise Ratio:	
NORMAL;	50 dB (with Dolby* NR ON)
Dynamic Range:	
Hi-Fi;	90 dB
(Input level)	
Ext Sync In (BNC);	4.0 Vp-p negative pulse 75Ω unbalanced
(Output level)	
Video Output:	
Video Out (BNC);	1.0 Vp-p 75Ω unbalanced
Dub Out (7P) Y;	1.0 Vp-p 1 kΩ unbalanced
C;	0.9 Vp-p 1 kΩ balanced
S-Video Out (4P) Y;	1.0 Vp-p 75Ω unbalanced
C;	0.3 Vp-p burst level 75Ω unbalanced
Audio Output:	
Audio Out (XLR);	Hi-Fi, CH1/CH2 +4/0/−6 dBs 50Ω balanced NORMAL, CH1/CH2 +4/0/−6 dBs 50Ω balanced
Audio Monitor Out (PHONO);	0 dBv 600Ω unbalanced
Headphones Out (¼″ PHONO);	−60~−20 dBv 8Ω unbalanced
Time Code Output:	
Time Code Out (PHONO);	2.4 Vp-p low impedance unbalanced
DOC Out (BNC);	0.5 Vp-p 75Ω unbalanced

AG-A800 Editing Controller

Power Requirement:	220/240 V AC 50/60 Hz
Power Consumption:	30 W (with Interface Boad)
Operating Temperature:	5°C~40°C
Operating Humidity:	35%~80%
Dimensions:	Main Unit (W×H×D): 424×96×300 mm Control Panel (W×H×D): 424×75×275 mm
Weight:	Main Unit: Approx. 5.7 kg Control Panel: Approx. 2.2 kg
Editing System:	Micro Computer
Memory Capacity;	128 Events
Controls;	PLAY, STOP, REW, FF, READY, SRCH (Search), JOG, SHTL, REC, EDIT
Editing Controls;	PREVIEW, REVIEW, AUTO, EDIT, GO TO, EDIT STOP, TCG SET, EVENT, DUR (Duration), TOTAL
Editing Modes;	ASSEM (Assemble), INS V/A1/A2/TC (Insert), A/B ROLL and AUDIO SPLIT
Switcher Control;	AUTO, TAKE, TRAN, DIS, WIPE, KEY, P IN, A/B, P OUT, AUDIO
Counter Display:	
Event No. Display;	Event No. Indication
Display for P/R-VTR;	Edit point, MAX±9 hr. 59 min. 59 sec. 24 frames (CTL) Edit point, MAX+23 hr. 59 min. 59 sec. 24 frames (TC)
Switcher Control Display:	
Transition;	MAX. 999 frames
Pattern;	DIS, WIPE
Unit Connectors:	
REF VIDEO IN/OUT;	BNC×2 75Ω ON/OFF loop-through
SW/IF;	9p×1
TO KEY BOARD;	15 p×1
AUX CONTROL;	15 p×1 Relay contact×3 (Operating Voltage 24 V DC~1 V DC, Operating Current 100 mA~1 mA)
DATA IN/OUT;	25 p×1 RS-232C
Control Panel Connectors:	
TO I/F UNIT;	15 p×1
Connection Capability VTR:	AG-7500, AG-7510, AU-650B, AU-640, AU-630, AU-620
Connection Capability Switcher:	AG-SW800
Connection Capability (number of units):	
RECORDER;	1 unit
PLAYER;	1~2 units
Edit Reference;	CTL (Control) LTC (EBU Time code)
Preroll Time;	3, 5, 7, 10, 15 sec. (selectable)

AG-SW800 AV Switcher

Power Source:	220/240 V AC, 50~60 Hz
Power Consumption:	30 W (35 W with AG-RM800)
Video:	
S-Video IN;	4-pin×3, Y: 1.0 Vp-p 75Ω, C: 0.3 Vp-p 75Ω
S-Video OUT;	4-pin×1, Y: 1.0 Vp-p 75Ω, C: 0.3 Vp-p 75Ω
Composite IN;	BNC×3, 1.0 Vp-p 75Ω
Composite OUT;	BNC×1, 1.0 Vp-p 75Ω
DSK IN;	BNC×1, 1.0 Vp-p 75Ω
B.B. OUT;	BNC×1, SYNC, BURST: 0.3 Vp-p
Monitor OUT;	BNC×1, 1.0 Vp-p 75Ω
REF IN/OUT;	BNC×2 (loop through)
Frequency Response;	0.1~8 MHz±1 dB
Signal-to-Noise Ratio;	60 dB
Audio:	
XLR IN;	4 ch×3, 0 dBs 600Ω balanced
XLR OUT;	4 ch×1, 0 dBs 50Ω balanced
PHONO IN;	4 ch×3, −8 dBv 47 kΩ unbalanced
PHONO OUT;	4 ch×1, −8 dBv 47 kΩ unbalanced
Frequency Response;	20 Hz~20 kHz±1 dB
Signal-to-Noise Ratio;	60 dB
Control:	
Editing Controller;	AG-A800 (9-pin connector×1)
SW Remote Controller;	AG-RM800 (15-pin connector×1)
Operating Temperature:	5°C~40°C
Operating Humidity:	35%~80%
Weight:	8.8 kg
Dimensions:	424 (W)×96 (H)×400 (D) mm

AG-RM800 AV Switcher Remote Controller

Power Source:	12 V DC (supplied from AG-SW800)
Power Consumption:	4 W
Control Panel:	
Effect Mode;	DISS, WIPE, NOR, REV, , , , , , , , , KEY
Input Select;	A bus; P1, P2, AUX, BLK, W B bus; P1, P2, AUX, BLK, W
	VIDEO, KEY, AUDIO
Manual Key;	V/A, H/V
Fader Switching Key;	VIDEO, KEY, AUDIO
Memory Key;	VIDEO (H/V), DSK,
Fader;	AUDIO (CH1, CH2, CH3, CH4)
DSK Settings;	HUE, SAT, LUM, KEY LEVEL
Connector:	To AV Switcher (15-pin×1)
Connectable Switcher:	AG-SW800
Operating Temperature:	5°C~40°C
Operating Humidity:	35%~80%
Weight:	2.2 kg
Dimensions:	424 (W)×75 (H)×275 (D) mm

Specifications

AG-A750 Editing Controller

Power Requirement:	12 V DC (supplied from video recorder)
Power Consumption:	6 W
Operating Temperature:	5°C~40°C
Operating Humidity:	35%~80%
Weight:	Approx. 2.3 kg
Dimensions:	390 (W)×90 (H)×243 (D) mm
Accessories Supplied:	2 pcs. 34-pin Remote Control Cable
Controls:	
Source-Unit Side;	On line
Editor-Unit Side;	Edit
Source-Unit/Editor-Unit;	Record, Fast Forward, Play, Rewind, Stop, Pause/Still, Search (SHTL, JOG)
Editing Controls:	
Editing Modes;	Assemble, Insert (Audio CH1 CH2; Video)
Edit Point Trimming;	Set, In/Out/Trim-/Trim+ (source-unit/editor-unit), Reset
Editing Controls;	Preview, Auto Edit, Edit Stop, Return, Go-To, Review
Counter Display:	
Time Indication;	Max. ±9 hr. 59 min. 59 sec. 24 fames (source-unit/editor-unit)
Connectors:	
Remote Control Connector;	34-pin Remote Control Cable Connector (source-unit/editor-unit)
Additional Source Connector:	20 pin ON-Line Cable Connector
On Line Output Connector:	
Phono Jack, Open Collector output OFF;	less than DC 12 V
ON;	less than 10 mA
Compatible VTR Units:	
Basic System;	AG-7500
Limited System;	AG-6500, AG-6200, NV-8500, NV-9600, NV-9240
Connection Capability: (number of units)	Up to 3 Source Units (for 2 or 3 units, Remote Search Controller NV-A505 (option) or Multi-Source Switcher NV-J500 (option) is connected) 1 Editor Unit
Editing Precision:	±2 frames (with AG-7500/AG-6500) ±3 frames (with AG-7500/AG-6500 in colour framing mode)
Preroll Time:	3,5,7, sec (selectable)

AG-TB700 Time Base Corrector

(General)	
Television Format:	625 lines 50 field (PAL)
Processing Format:	Component
Power Source:	100/117/220/240 VAC selectable 50/60 Hz
Power Consumption:	Approx. 76 W
Operating Temperature:	10~40°C (50~104°F)
Operating Humidity:	10~90%
Dimensions:	430 (W)×44 (H)×450 (D) mm [17″ (W)×1.75″ (H)×17.7″ (D)]
Weight:	Approx. 9 kg (20 lbs)
Correction Range:	2 Fields
(Video)	
Quantization:	
Y;	8-bit
C;	8-bit
Sampling Frequency:	
Y;	13.5 MHz
C;	6.75 MHz (4:2:2 format)
Freeze:	Selectable frame/field
Strovo Freeze:	The automatic intermittent freeze function can be set ON/OFF. The time interval can be also set from the card edge control.
No-signal Freeze:	When no signal is input or a disturbance that affects H or V timing occurs (such as excessive noise), the picture is automatically frozen by field. (Internally selectable ON/OFF. Factory set is OFF.)
Vertical Blanking:	Internal selectable ON/OFF
Frequency Response:	
Y;	5 MHz (−3 dB max.)
C;	4.43 MHz ±0.5 MHz (−3 dB)
DG. DP:	2%, 2° (APL 10–90%)
K factor (2T):	2% (Heterodyne mode)
HV TILT:	1%
White/Black Clip:	110/0 IRE
Output Signal Jitter:	
Luminance;	±15 sec.
Chrominance;	±2°
S/N ratio:	56 dBp-p/rms (excluding quantization noise)
(INPUT Level) (100% White, 75% Color Bar)	
Video Input:	
Composite 1.0 Vp-p (75Ω);	1 input BNC Y/C443
Y;	Luminance, 1.0 Vp-p (75Ω)
C;	Chroma, Burst Level 0.3 Vp-p (75Ω), 2 inputs, 4-pin S-type connector and 7 pin Y/C443-type connector
Genlock Input:	BB 0.45 Vp-p, High impedance loop-through, BNC
DOC Input:	RF 0.2 to 1 Vp-p (75Ω), BNC
(OUTPUT Level)	
Video Output:	Composite 1.0 Vp-p (75Ω), 2 outputs, BNC Y/C443
Y;	Luminance, 1.0 Vp-p (75Ω)
C;	Chroma, Burst Level 0.3 Vp-p (75Ω), 2 outputs, 4-pin S-type connector and 7-pin Y/C443-type connector
Component:	
Y;	1.0 Vp-p (75Ω)
P_R (R-Y);	0.7 Vp-p (75Ω)
P_B (B-Y);	0.7 Vp-p (75Ω) 1 output each, BNC connectors
ADV. Sync Output:	4 Vp-p (75Ω), 1 output, BNC connector

AG-IA422 9P/34P Interface Adaptor

Power Supply:	220/240 V AC 50/60 Hz
Power Consumption:	Approx. 15 W
Operating Temperature:	0°C~40°C
Operating Humidity:	35%~80%
Dimensions (W×H×D):	430×52×280 mm
Weight:	Approx. 5.0 kg
Connectable VTRs:	AG-6500, AG-7500
Connectable Editing Controllers:	BVE-800, BVE-900
Ext Sync (BNC×2):	loop-through 75Ω ON/OFF switch
Time Code In (PHONO):	1.0 Vp-p, 10 kΩ unbalanced
Time Code Out (PHONO):	2.4 Vp-p, low impedance unbalanced

AG-7330 S-VHS Multi-purpose VTR

(General)

Power Source:	220/240 V AC 50~60 Hz
Power Consumption:	Approx. 55 W
Operating Temperature:	5°C~40°C
Operating Humidity:	35%~80%
Dimensions (W×H×D):	424×132×423 mm
Weight:	Approx. 11.2 kg

(System)

Television System:	CCIR (625 lines, 50 fields) PAL colour signal EIA (525 lines, 60 fields) 4.43 MHz modified NTSC colour signal
Video Recording:	2 rotary heads, helical scanning system
Audio Channel:	4 channels
NORMAL (CH1/CH2);	2 fixed heads
Hi-Fi (CH1/CH2);	2 rotary heads

(Tape Transport)

Tape Speed:	23.39 mm/sec. (PAL) 33.35 mm/sec. (M-NTSC)
Tape Format:	VHS/S-VHS Tape

(Video)

Horizontal Resolution: (On monoscope test pattern)	
monochrome;	more than 400 lines (S-VHS) more than 300 lines (VHS)
colour;	more than 400 lines (S-VHS) more than 240 lines (VHS)
Signal-to-Noise Ratio: (Rohde & Schwartz noise meter)	
monochrome;	45 dB (VHS)
colour;	45 dB (VHS) (with TRAP ON)

(Audio)

Frequency Response:	
NORMAL;	50~12 kHz
Hi-Fi;	20~20 kHz
Signal-to-Noise Ratio:	
NORMAL;	50 dB (with Dolby* NR ON)
Dynamic Range:	
Hi-Fi;	90 dB

(Input level)

Video Input:	
Video In (BNC);	1.0 Vp-p 75Ω unbalanced
S-Video In (4P) Y;	1.0 Vp-p 75Ω unbalanced
Audio Input:	
Audio In (PHONO);	Hi-Fi CH1/CH2 −8 dBv 47 kΩ unbalanced NORMAL CH1/CH2 −8 dBv 47 kΩ unbalanced
MIC In;	CH1/CH2 −60 dBv 4.7 kΩ unbalanced
Time Code Input:	
Time Code In (PHONO);	1.0 Vp-p 10 kΩ unbalanced
Ext Sync In (BNC);	4.0 Vp-p negative pulse 75Ω unbalanced

(Output level)

Video Output:	
Video Out (BNC);	1.0 Vp-p 75Ω unbalanced
S-Video Out (4P) Y;	1.0 Vp-p 75Ω unbalanced
Audio Output:	
Audio Out (PHONO);	Hi-Fi CH1/CH2 −8 dBv 600Ω unbalanced NORMAL CH1/CH2 −8 dBv 600Ω unbalanced
Audio Monitor (PHONO);	0 dBv, 600Ω unbalanced
Headphones (¼″ PHONO);	−60~−20 dBv 8Ω unbalanced
Time Code Output:	
Time Code Out (PHONO);	2.4 Vp-p low impedance unbalanced

AG-7130 S-VHS Video Cassette Player

(General)

Power Source:	220/240 V AC 50~60 Hz
Power Consumption:	Approx. 45 W
Operating Temperature:	5°C~40°C
Operating Humidity:	35%~80%
Dimensions (W×H×D):	424×132×420 mm
Weight:	Approx. 11.1 kg

(System)

Television System:	CCIR (625 lines, 50 fields) PAL colour signal EIA (525 lines, 60 fields) 4.43 MHz modified NTSC colour signal
Video Recording:	2 rotary heads, helical scanning system
Luminance;	FM azimuth recording
Chrominance;	converted subcarrier phase shift recording
Audio Channel:	4 channels
NORMAL (CH1/CH2);	2 fixed heads
Hi-Fi (CH1/CH2);	2 rotary heads

(Tape Transport)

Tape Speed:	23.39 mm/sec. (PAL) 33.35 mm/sec. (M-NTSC)
Tape Format:	VHS/S-VHS Tape

(Video)

Horizontal Resolution: (On monoscope test pattern)	
monochrome;	more than 400 lines (S-VHS) more than 300 lines (VHS)
colour;	more than 400 lines (S-VHS) more than 240 lines (VHS)
Signal-to-Noise Ratio: (Rohde & Schwartz noise meter)	
monochrome;	45 dB (VHS)
colour;	45 dB (VHS) (with TRAP ON)

(Audio)

Frequency Response:	
NORMAL;	50~12 kHz
Hi-Fi;	20~20 kHz
Signal-to-Noise Ratio:	
NORMAL;	50 dB (with Dolby* NR ON)
Dynamic Range:	
Hi-Fi;	90 dB

(Input level)

Time Code Input:	
Ext Sync In (BNC);	4.0 Vp-p negative pulse 75Ω unbalanced

(Output level)

Video Output:	
Video Out (BNC);	1.0 Vp-p 75Ω unbalanced
S-Video Out (4P) Y;	1.0 Vp-p 75Ω unbalanced
C;	0.3 Vp-p burst level 75Ω
Audio Output:	
Audio Out (PHONO);	Hi-Fi CH1/CH2 −8 dBv 600Ω unbalanced NORMAL CH1/CH2 −8 dBv 600Ω unbalanced
Audio Monitor (PHONO);	0 dBv, 600Ω unbalanced
Headphones (¼″ PHONO);	−60~−20 dBv 8Ω unbalanced
Time Code Output:	
Time Code Out (PHONO);	2.4 Vp-p low impedance unbalanced

Specifications

AG-DA700 Video Distributor

Power Supply:	220–240 V AC, 50/60 Hz
Power Consumption:	39 W
Operating Temperature:	5°C~40°C
Operating Humidity:	35%~80%
Weight:	5.8 kg
Dimensions (W×H×D):	424×43.5×400 mm (without rubber feet)
Video Input:	
Component;	12-pin×1
Composite;	BNC×1 (Loop-through) 1.0 Vp-p 75Ω
S-VIDEO;	4-pin×1
Video Output:	
S-VIDEO;	4-pin×10
Monitor;	BNC×1 1.0 Vp-p 75Ω
S/N Ratio:	
Y;	Component S-VIDEO, more than 65 dB Composite, more than 55 dB
C;	Component/S-VIDEO (AM, PM), more than 55 dB Composite (AM, PM), more than 55 dB

AG-DA750 Video Distributor

Power Supply:	AC 220–240 V, 50/60 Hz
Power Consumption:	Approx. 18 W
Operating Temperature:	5°C~40°C
Operating Humidity:	35%~80%
Weight:	3.9 kg
Dimensions (W×H×D):	424×43.5×300 mm (without rubber feet)
Video Input:	
S-VIDEO;	4-pin×1 (Loop-through×1)
Video Output:	
S-VIDEO;	4-pin×10
Monitor;	BNC×1 (Composite) 1.0 Vp-p 75Ω
S/N Ratio:	
Y;	more than 65 dB
C;	more than 65 dB
Monitor;	more than 65 dB

AG-DA760 Audio Distributor

Power Supply:	AC 220–240 V, 50/60 Hz
Power Consumption:	Approx. 8 W
Operating Temperature:	5°C~40°C
Operating Humidity:	35%~80%
Weight:	4.1 kg
Dimensions (W×H×D):	424×43.5×300 mm (without rubber feet)
Audio Input:	
A;	XLR 3-pin ×2 +8, +4, 0 dBm/600Ω balanced
B;	Phono jack×2 −6, −8 dBV/10kΩ unbalanced
Maximum Input:	
A;	+30 dBm (Sensitivity at +8 dBm)
B;	+15 dBV (Sensitivity at −6 dBV)
Audio Output:	
Ch 1;	Phono jack ×10 −8 dBV 330Ω unbalanced
Ch 2;	Phono jack ×10 −8 dBV 330Ω unbalanced
Monitor;	Phono jack×1, 0 dBV 330Ω unbalanced
Total Harmonic Distortion: (Rated Power at 20 Hz–20 kHz)	Less than 0.01%
S/N Ratio: (IHF-A weighted)	More than 92 dB

BT-D2020PY Monitor

CRT:	Medium Resolution 20″ CRT 0.55 mm dot pitch 90°
System:	PAL System (S-VHS)
Input/Output:	
Video;	Line A/B BNC (×4)
Sync;	Ext. Sync. BNC (×2)
R.G.;	
BR;	BNC (×2)
G;	BNC (×2)
B;	BNC (×2)
Y.PB.PR;	
Y;	BNC (×2)
PB;	BNC (×2)
PR;	BNC (×2) (Switchable with RGB Input)
S-Video Input (Mini-4P Type)	
S-Video Output (Mini-4P Type)	
AC. 220 V–240 V 50Hz	
Dimensions: (W×H×D)	448×414×511 mm
Weight:	29 kg

PT-102Y/PT-302Y Colour Video Projection System

Projection Tube:	7-inch specially developed high brightness liquid cooled CRTs (R.G.B)
Lenses:	Double focus, F1.0, f145 three lenses (hybrid)
Luminous Output:	650 Lumens (at white peak)
Resolution:	
Video;	650 TV lines
RGB;	1000 TV lines
S-Video Input Level:	
Y;	1±0.3 Vp-p, 75Ω
C;	0.286 Vp-p
Screen Size:	
PT-102Y;	50″–120″ diagonal
PT-302Y;	150″–300″ diagonal

BT-M1420PY Monitor

CRT:	Medium Resolution 14″ CRT 0.39mm dot pitch 90°
System:	PAL System (S-VHS)
Input/Output:	
Video;	Line A/B BNC (×4)
Sync;	Ext. Sync. BNC (×2)
R.G.B;	
R;	BNC (×2)
G;	BNC (×2)
B;	BNC (×2)
Y.PB.PR;	
Y;	BNC (×2)
PB;	BNC (×2)
PR;	BNC (×2) (Switchable with RGB Input)
S-Video Input (Mini-4P Type)	
S-Video Output (Mini-4P Type)	
AC. 220 V–240 V 50 Hz	
Dimensions: (W×H×D)	424×274×463 mm
Weight:	18.5 kg

PT-106 Colour Video Projection System

Projection Tube:	Optical coupling, 7″ liquid cooled IMF CRTs (R.G.B)
Lenses:	Double focus, three F1.05, f145 colour corrected lenses
Luminous Output:	550 Lumens (at white peak)
Resolution:	
Video;	650 TV lines
RGB;	Horizontal 1470 dots 1100 lines Vertical 1100 dots Bandwidth 30 MHz
Scan Frequency:	
fH;	15–37 kHz
fv;	50–100 Hz
Speaker Output:	1.5 W
Screen Size:	80″–120″ diagonal

Weight and dimensions shown are approximate.
Specifications and design are subject to change without notice.

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